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Vol V. *December, 1915* No. 6

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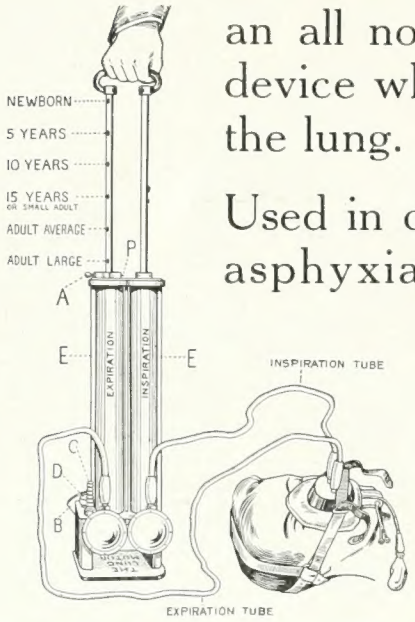

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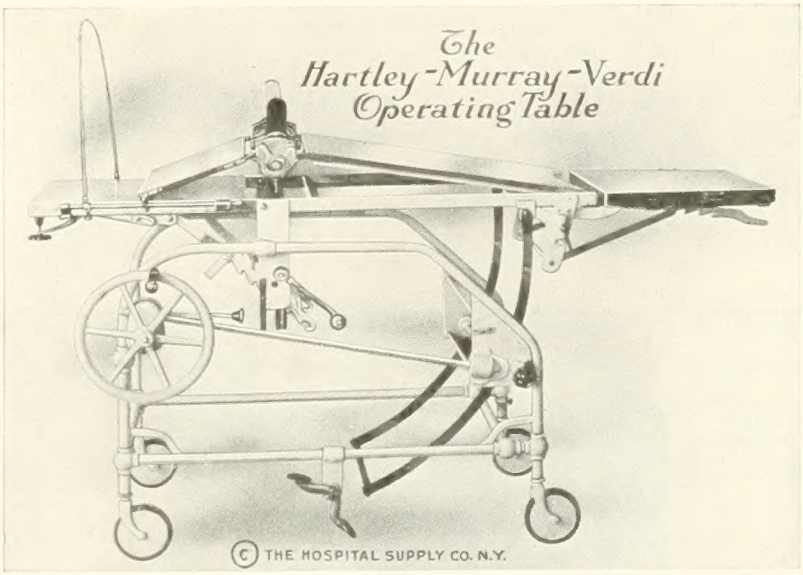

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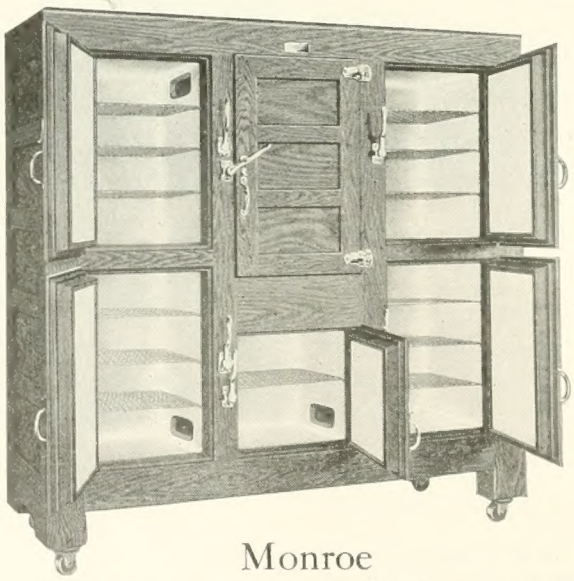

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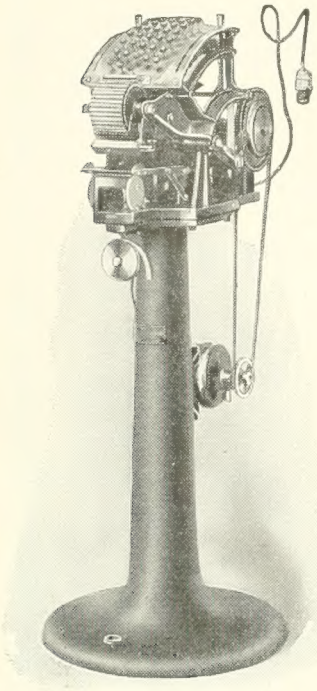

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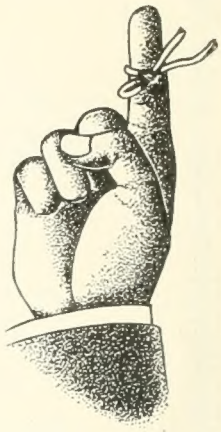

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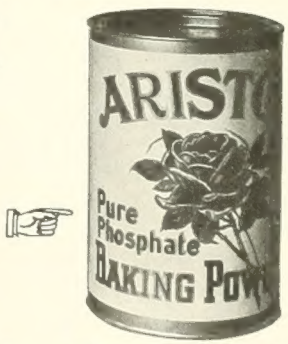

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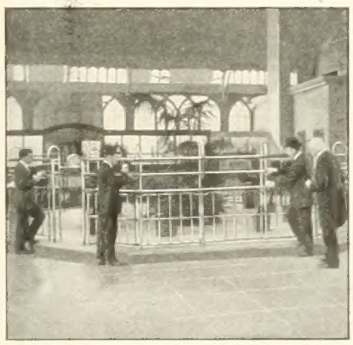

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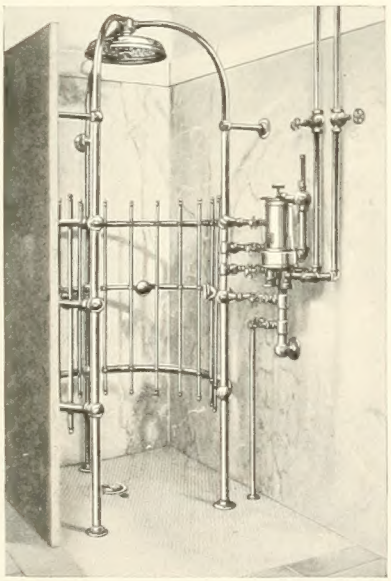

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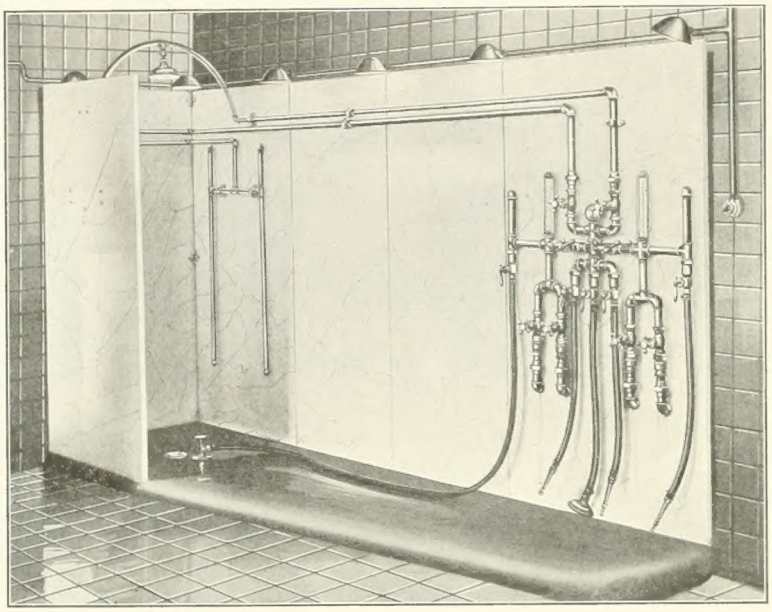

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STERILIZERS
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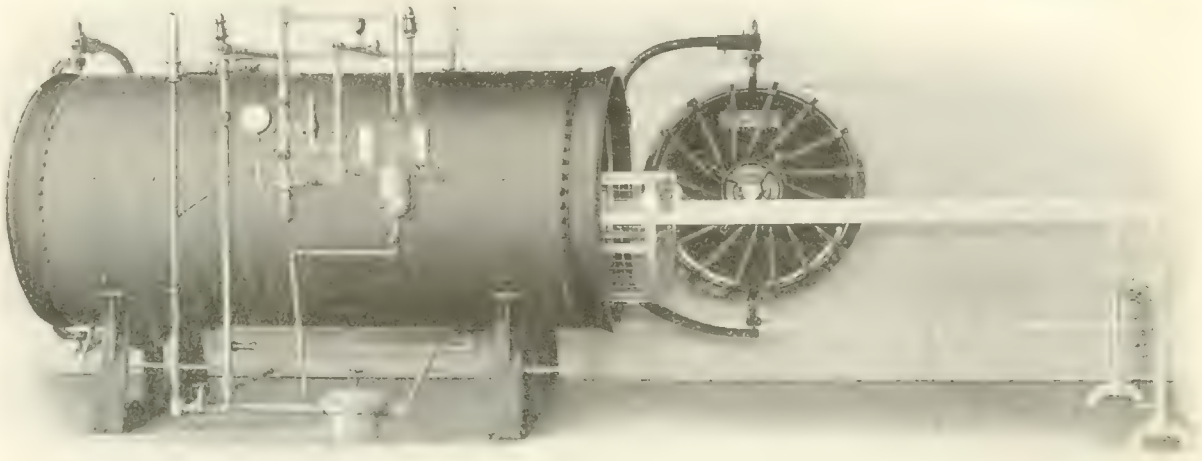

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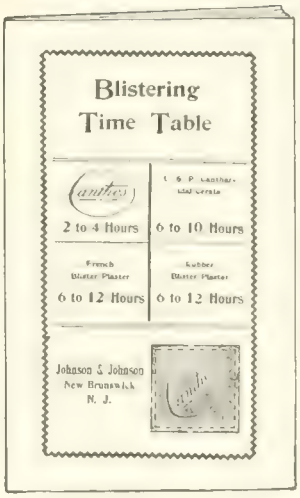

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will be sent to any nurse, physician or hospital head upon request.

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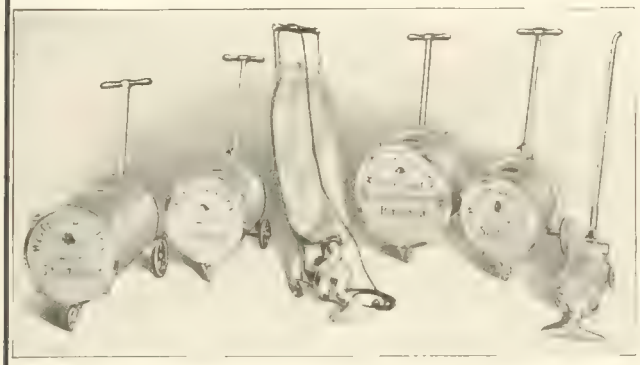

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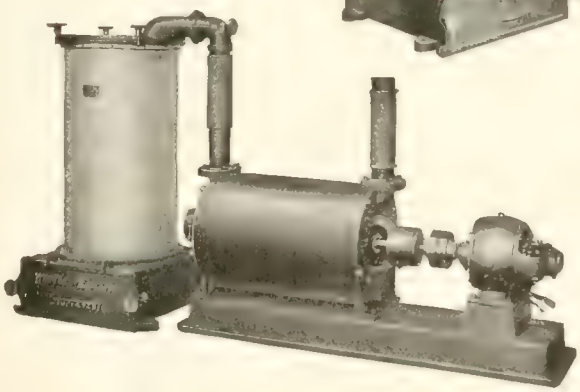

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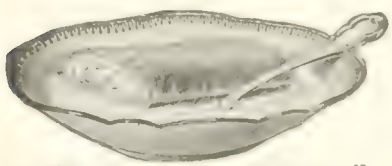

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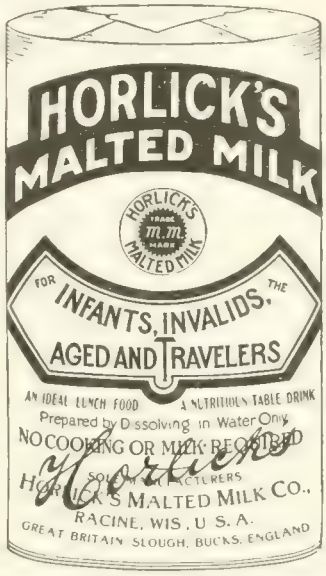
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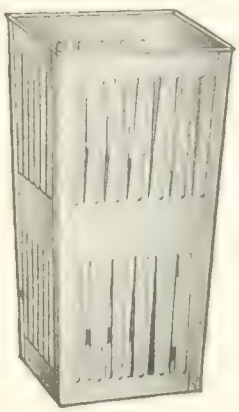

No. 2

WASTE BASKETS THAT ARE SANITARY

and are in keeping with the proper appearance so desirable in the physician's office and in the hospital.

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No. 1 is our regular White Enamel Basket. The openings in the sides run only part way down; small objects, therefore, cannot fall through. The basket can also be supplied without openings if desired.

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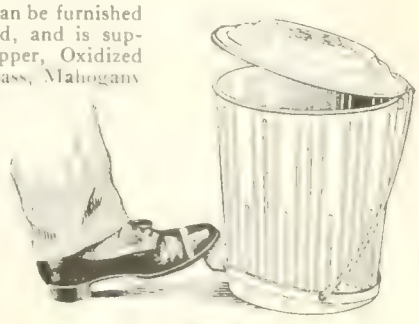

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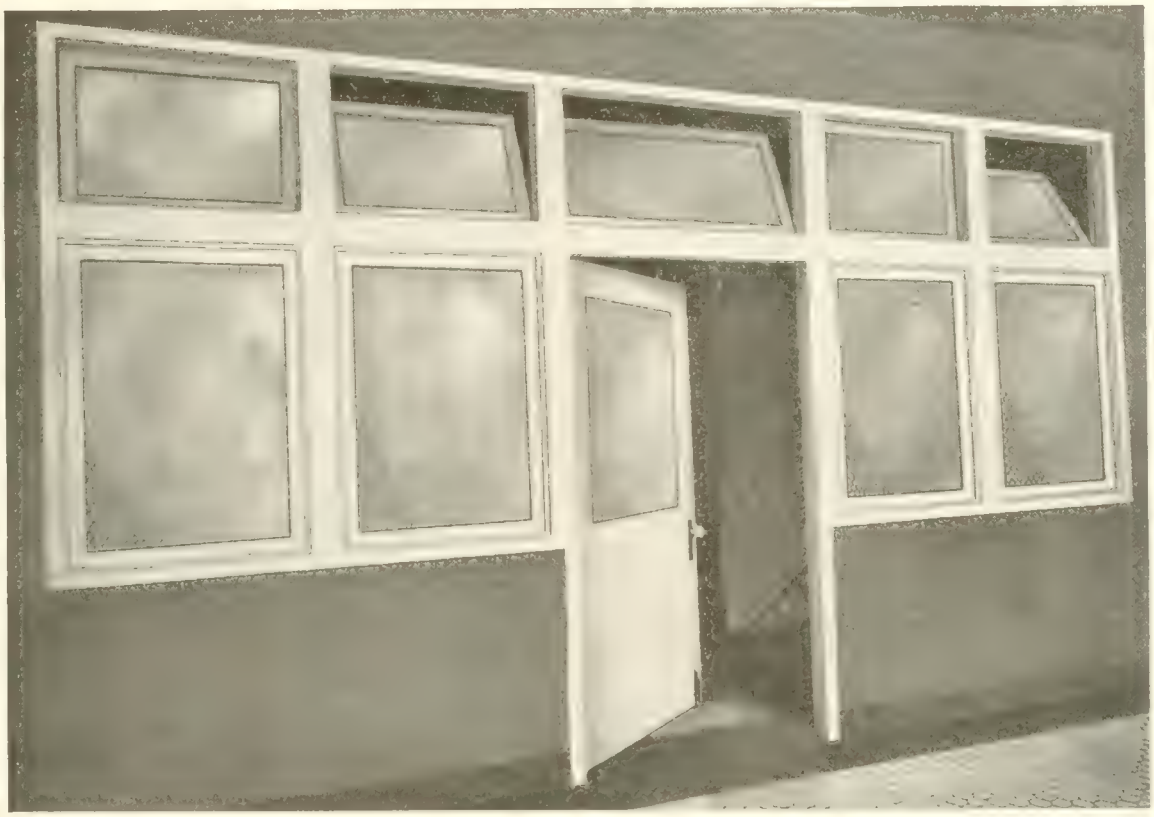
ERIE, PA.



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MAKE EACH ROOM A SEPARATE BUILDING

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Provide and install laundry chute where shown. Same shall be glass enamel lined, 24 inches inside diameter, and not over 2 feet 5 inches outside diameter of flange.

The chute shall be made of steel, properly flanged and bolted together in sections or rings not to exceed 48 inches long. Door sections shall be of length to receive the openings where shown.

Provide and set at each floor where shown German silver doors, with either plate glass or polished wire glass set in rubber bed to prevent jarring.

Doors to be 22 inches in diameter and equipped with closing clamps, which permit their being closed water-tight.

Throat to which door is attached shall be of steel welded to chute proper and enameled. The bottom of chute shall be closed with head of enameled steel, with 2-inch outlet bushing for drain connections.

Chute shall be provided with four legs for its proper support. Additional supports shall be provided at each floor. These supports to consist of ⅝-inch tie rods and three angle irons to rest in steel work at each floor.

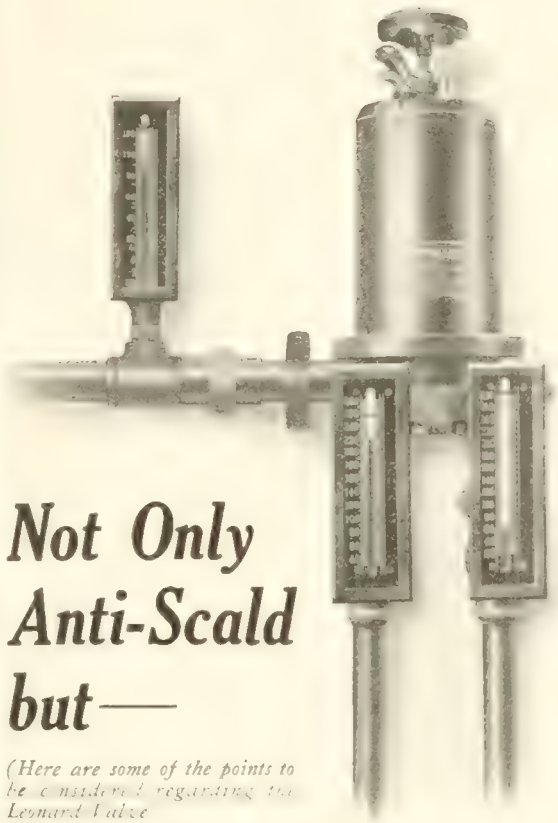
The enameling of the interior shall extend into section joints. All sections shall be erected in accordance with the manufacturers' direction.

All joints shall be properly packed so that the chute shall be water-tight.

Chute shall be of The Pfaudler Co., of Rochester, N. Y., make.

The top section shall be provided with a 2-inch flushing ring of brass, nickel plated, to which may be connected by means of standard 2-inch bushing, the water service pipe.

The Pfaudler Co.
Rochester, N.Y.



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(Here are some of the points to be considered regarding the Leonard Valve

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Hospital Supplies
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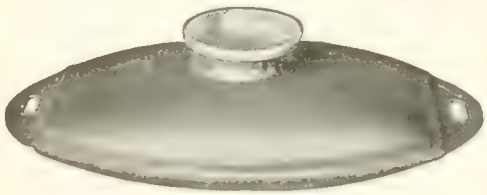

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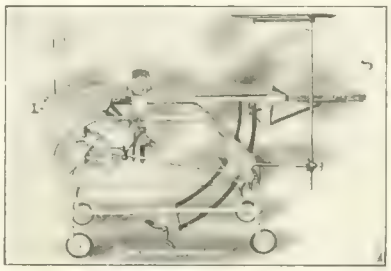

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Agents for leading European Manufacturers, thus giving a larger assortment than others.

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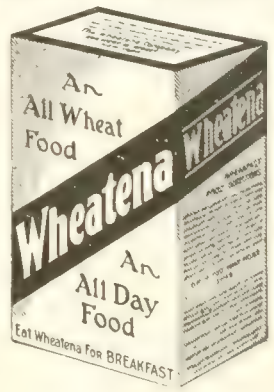
"Between Meals Feeding."

Mealtime should be a pleasurable event, and taste and flavor of food are quite as important factors for the well being of the patient as nutritive value and digestibility.

Will you try Wheatena

for that patient of yours who has little appetite, and to whom nothing tastes good? *Will you, nurse, try it yourself?* You can easily prepare it in three minutes at any time.



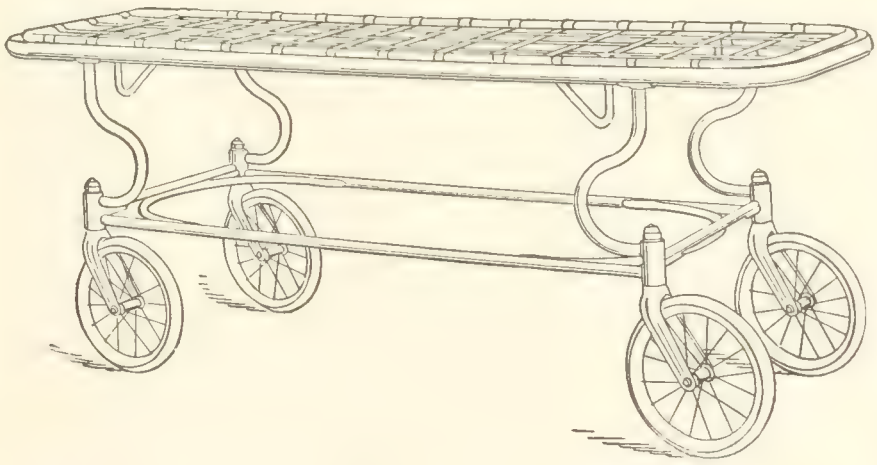
Try Wheatena at our expense.

Our Offer to Superintendents or Dietitians.

Write specifying capacity of your hospital, so we may send enough packages of Wheatena (carriage prepaid) to be of real service. This places you under no obligations. Write to-day mentioning December "Modern Hospital."

The Wheatena Company, Wheatenaville, Rahway, New Jersey

Bernstein's Wheel Stretchers



Heavy wrought steel construction. Baked white enamel finish. Detachable steel stretcher top. 1¼-inch endless rubber cushion tire (U. S. patent September 20th, 1910) encircling the entire top, to prevent marring of walls, etc. Mounted on four swivel wheels, all having 12-inch x 1¼-inch endless rubber cushion tires. Size, 20 inches x 72 inches. Height, 31 inches.

These Stretchers have endless rubber cushion tire encircling the entire top to prevent the marring of walls, corridor corners, and door frames.

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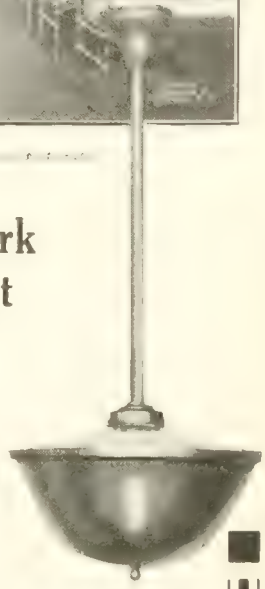

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The facts presented in this series of announcements are based on authoritative clinical data.

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When there is a retention of feces along the intestinal tract from which the patient may show symptoms of auto-intoxication, and yet have regular daily movements or even diarrhoea, STANOLAX—liquid paraffin—is of unusual value as a treatment.

STANOLAX lubricates the entire tract and dissolves all the hardened fecal matter that may be retained above the colon or lodged in the "kinks" of the intestines.

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Stanolax Liquid Paraffin

Lane, Sir W. Arbuthnot (Guy's Hosp. Ga., Lond., 1911, XXV, 403, Lancet, 1911, II, p. 1540, Brit. Med. Jour., 1913, II, p. 1126, Proc. Roy. Soc. Med., 1913, VI, p. 49, Surg., Gynec. and Obst., 1913, p. 600): Most of the toxic intestinal substances are absorbed in the small bowel, though he attributes the primary cause of the trouble to the colon. It is here that the first stasis occurs, causing the colon to sag and to pull upon its mesenteric attachments, producing thereby sharp kinks and turns in the small intestines instead of the gradual and rounding loops of the normal gut. These kinks represent points of tractions and in time are accentuated by a thickening of the mesentery at these points. Lane advises that such cases should not be treated with laxatives, large quantities of water, buttermilk, etc., because little progress is possible under such treatment. For this condition—intestinal stasis—he recommends liquid paraffin as an ideal remedy.

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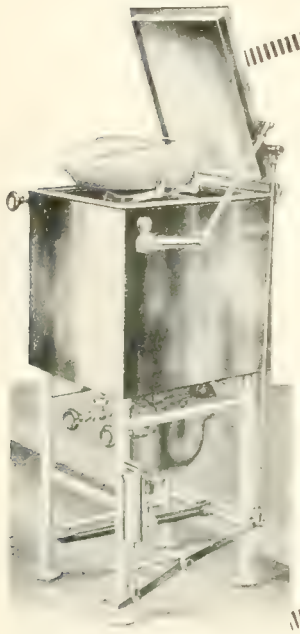

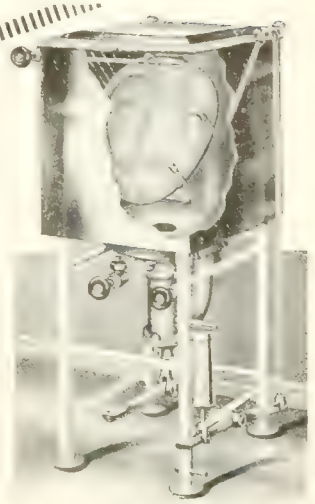

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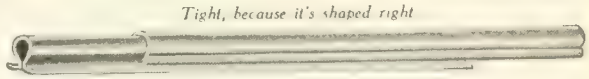

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D. D. KIMBALL, President
American Society
of Heating and Ventilating Engineers.

(See Modern Hospital, October, 1915, page 274)

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Multiply this area by the number of windows in each ward and you'll appreciate what an amount of dust and soot can get in. Also what drafts are created—how much cold air in winter finds its way through to tax your heating plant unnecessarily.

MONARCH
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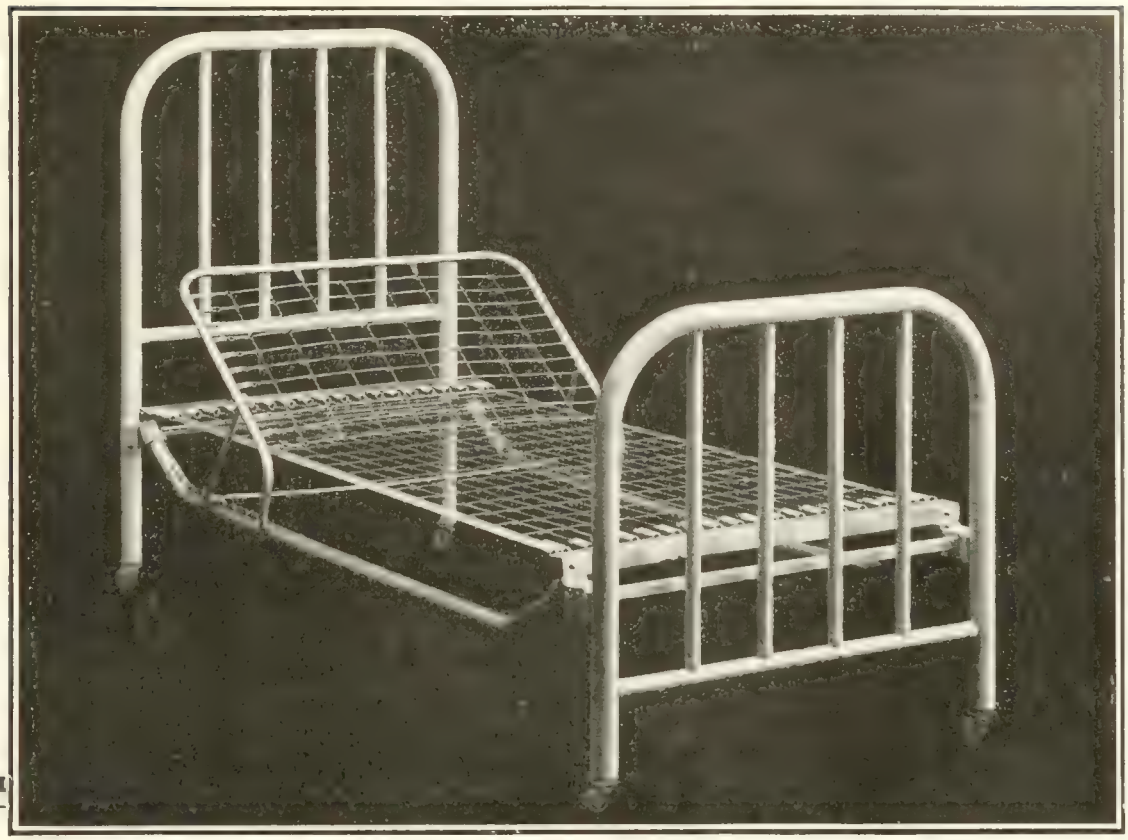

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1915

THE MODERN HOSPITAL

A Monthly Journal Devoted to the Building, Equipment, and Administration of Hospitals, Sanatoriums, and Allied Institutions, and to their Medical, Surgical, and Nursing Services

Vol. V *December, 1915* No. 6

THE ST. LOUIS CHILDREN'S HOSPITAL

A Hospital Group of a Distinctive Character, Which Provides for Contagious and Non-Contagious Cases, and for Teaching and Research

By MAURAN, RUSSELL & CROWELL, Architects; Dr. S. S. GOLDWATER, Hospital Consultant, and Dr. BORDEN SMITH VEEDER, Chief of Staff

BEFORE proceeding to a discussion of the plans of the St. Louis Children's Hospital (including the Martha Parsons Free Hospital), it is necessary to explain that the hospital is part of a cooperative enterprise. The Children's Hospital has no power plant of its own, no kitchen, no nurses' home, no operating rooms suitable for major surgical work, nor any laundry. Economy in the size and the cost of the buildings themselves, as well as in the cost of their operation, has been secured by cooperation with Washington University and Barnes Hospital.

Food supplies for the Children's Hospital are sent over from the kitchen of the Barnes Hospital, in an adjoining building. All adults engaged in the work of the Children's Hospital have their meals in the dining rooms at the Barnes Hospital. Important surgical operations are performed at Barnes, and the telephones of the Children's Hospital are connected with a central switchboard in the Barnes Hospital. The two groups of buildings are connected by a service tunnel.

By cooperation with the medical department of Washington University, the out-patient division of the Children's Hospital is conducted in the out-patient building of Washington University; the nurses of the Children's Hospital live in the Nurses' Home of Washington University; and the university power house furnishes to the Children's Hospital hot water for heating and bathing, live steam for sterilizing, electricity for light, power and heat, and brine for refrigeration and for cooled water.

Washington University, Barnes Hospital and the St. Louis Children's Hospital are three independent corporations, united for mutual advantage. For the service furnished by the other institutions, cost price is paid by the Children's Hospital.

The rather odd and unusual general plan of the Children's Hospital is the outcome of a series of studies, in the course of which an attempt was made to meet the requirements of a given program, within definite limits of space and cost. By agreement there was allotted to the Children's Hospital a section of the large plot which had been secured for the use of the medical department of Washington University and its affiliated hospitals. The space assigned to the Children's Hospital was approximately 90x200 feet, facing Kingshighway on the west, and lying to the north and northwest of the Barnes Hospital group. There is a clear distance of more than 75 feet between the south front of the main ward building of the Children's Hospital and the nearest Barnes building.

The Children's Hospital group consists of three main parts. The main ward building is a U-shaped structure, the typical floor of which shows an open ward and loggias on its south front, subdivided ward space in the west wing, extending to the north along Kingshighway, and an elevator, day-room, clinical laboratory, and dressing room in the corresponding wing in the east. On the two lower floors the east wing does not abruptly terminate at the northerly end, but continues in a corridor, which unites it with the lecture hall, lying midway between the main ward building and the isolated wards.

Fig. 1. St. Louis Children's Hospital, St. Louis. General view of group from Kingshighway, showing public entrance; lecture hall entrance (through porte-cochere) and contagious building at high point of driveway which makes the circuit of the court lying between this group and the Barnes group.

It was desired to accommodate in the main ward building, approximately one hundred patients. A typical ward unit accommodating thirty-five patients was agreed upon as being reasonably economical and as representing possibilities of suitable subdivision. A smaller unit would have involved the needless duplication of expensive equipment. Furthermore, it was considered desirable to adopt a ward unit of such size that there would be no temptation to entrust the ward to the care of a single night nurse. This, we think, is an important consideration in the planning of the ward units of an "acute" hospital. In a ward sheltering the acutely sick, situations are constantly arising which make it essentially dangerous to leave a nurse without help during the long night watch. A whole chapter might be written on this point, but we must pass it by with this brief reference, assuming that its significance will be understood by hospital workers.

Although a thirty-five bed unit was regarded as feasible and desirable, elementary hospital hygiene forbade placing the whole number of patients in a single room; the program required the placing of approximately half of the children in small wards, including one-bed, two-bed and four-bed wards. The hospital is provided with a subdivided receiving ward, where all cases are subjected to detention and observation on admission. But despite all precautions, patients may pass this outpost while in the incubating stage of some contagious disease; hence, the desirability of additional "catch" wards. The small units of the receiving ward represent, therefore, the first stage of treatment and absolute segregation; the small units of the upper wards, the second stage of treatment and partial segregation; and the open wards, the third stage of treatment, without segregation.

The south and west fronts of the buildings were obviously the most attractive. The south front has the advantage in the climatic sense, the west front because of its view of boulevard and park. Along these two fronts the patients' beds are ranged. In the middle of the south front is the open ward; to the right and left of the ward, the loggias. The ward service rooms are strung along the corridor, thus reducing to a minimum the distance between the service rooms and the ward proper. The nurses' station is at the corridor angle, from which point the nurse can visually control the main ward, the adjacent loggias and the side corridor and its adjacent glass-walled rooms.

Passing over, now, to the contagious or isolated ward building, one encounters an entirely different arrangement. The program called for a sufficient number of beds to serve for teaching purposes. In other words, it was desired to make the Children's Hospital serve adequately as a clinic and as a clinical laboratory of pediatrics for Washington University; and this college is one of the very few medical colleges of this country which have assembled in a single group of buildings, conveniently accessible for daily study, both contagious and non-contagious diseases.

Although the three isolated wards are superimposed, a study of the plans will show that the

Fig. 2. St. Louis Children's Hospital, St. Louis. Shows more in detail the visitors' porches on the contagious building, as well as the open stairway and elevator shaft.

Fig. 3. St. Louis Children's Hospital, St. Louis. View of the typical corridor separating wards from bath, utility rooms, kitchen, etc. This illustrates the plate glass partition used throughout to separate corridors from wards; showing clock system, as well as loud-speaking doctors' call telephone. A stretcher is shown standing in the corridor; but there is a special stretcher closet.

several floors are quite as separate as if the wards occupied separate pavilions, far removed from each other. There is no indoor shaft connecting one floor with another. The stairway and elevator are built in the open. A fresh air corridor, running east and west, separates the ward unit from a group of sleeping rooms, available for the use of either nurses, mothers or staff, and forming a sort of island unit. South of the fresh-air corridor is the ward unit itself, forming a second island, surrounded by fresh air and subdivided into spaces, every one of which is directly accessible from out-of-doors.

The original scheme was to provide one floor for scarlet fever, a second floor for diphtheria, and a third floor for measles, and a fourth for mixed infections. For reasons of economy the plan was later reduced to three stories only for patients' use. The arrangement and equipment are such that the building lends itself to any imaginable grouping of cases.

The service rooms occupy most of the side of the building which looks toward the main ward building. There would have been no danger in assembling the patients themselves on this side of the building, but the other front was the more open of the two, and furthermore, the mental attitude of patients and visitors in the main building was considered. There can be no question of the conveyance of disease by the atmosphere from one building to another. Nevertheless, it seemed desirable to place the patients where they would not be constantly seen, and by their nearness tend to excite the minds of visitors in the main hospital, who might not be conversant with the scientific theories of communicable diseases.

A study of the veranda arrangement shows that there is an outdoor approach on one side of the building to all of the service rooms, and on the other a visitors' balcony, from which relatives can see the children in the ward without entering the building; on the south front is a patients' loggia. All of these outdoor spaces, as well as the rooms themselves, are screened the entire year.

The buildings will now be discussed floor by floor.

ELIZABETH J. LIGGETT MEMORIAL AND THE LECTURE HALL

First Floor.—At the northern extremity of the west wing is the ambulance entrance, opening into the receiving ward corridor, on either side of which are single rooms separated by partitions consisting largely of glass (Fig. 6). Opening off the corridor of the receiving ward is a side corridor, connecting with the ward service. This interior service corridor on the first floor is open to criticism, because of its lack of direct ventilation. Frankly, it is a compromise. This section of the building was useful for no other purpose, and the location of the service rooms on the upper floors brought many of the pipe lines into this locality, where, for purposes of economy, it was desired to make use of them. While the interior corridor is not directly ventilated the adjoining rooms all have ample outside ventilation, and the actual

Fig. 4. St. Louis Children's Hospital, St. Louis. Baby baths with mixing tank for temperature control.

Fig. 5. St. Louis Children's Hospital, St. Louis. General view of ward, showing ventilating devices in connection with transoms, also showing specially designed ceiling lights made of ordinary graniteware in nickel-plated spreader; also showing one of the porches which flank all wards.

quantity of service in this corridor is comparatively small.

The south front on this floor is devoted to administrative purposes. To the right of the central vestibule is the main office; to the left, the manager's room; at the westerly end of the main corridor is the waiting room, treated as an alcove, so as to light and ventilate the main corridor. Adjoining the waiting room, directly beneath the southwest loggia, is an examining room; beneath the opposite loggia, at the other end of the corridor, is a private office. The elevator faces the corridor at the easterly end. Adjoining is the stairway, treated as a fire stairs, and beyond, in a northerly direction, a social service office, laboratory, toilets for both sexes, and a supply closet.

It is on this floor that the Children's Hospital building connects with the Barnes group; food supplies brought from the central kitchen can be delivered directly to the diet kitchen on this floor, without entering the main hall. Along the corridor which connects the several buildings of the Children's Hospital group there have been placed a drug room, a supply or storage room, a small lecture or demonstration room, a linen room, an autopsy room and an undertaker's room.

The relation of the medical students' lecture room to the connecting corridor is obvious, and needs no explanation here.

The special feature of this lecture room is the complete separation of the means of access of the students, the lecturer and the patient. The students, entering through the south portal, pass between the cloak room, with its lavatory on the left, and the storage room on the right, by means of two stairways flanking the lantern operator's booth, to the tiers of seats arranged with so sharp a slope that an unobstructed view is given from every side of both the screen and the case being demonstrated. Access for the lecturer, on the other hand, together with the private waiting room for the "case," lies adjacent to the main connecting corridor. The lighting fixtures in this room are so designed that from the point of view of the audience they are of typical indirect metal type, but on the sides nearest the lecturer a concealed reflector device is installed, controlled by separate switches.

Second Floor.—The features of this floor are the main ward and the adjacent loggias; the west wing, subdivided into six small wards opening into a corridor which has ample natural ventilation; patients' toilet; nurses' toilet; linen closet; cleaners' closet; supply closet; bath room (Fig. 4); utility room; blanket warming closet; diet kitchen; dining room for convalescents, and clinical laboratory.

Attention is directed to the arrangement of the utility room. Its accessibility should be noted. The room is spacious and has two windows. Supply cupboards are close to the open doorway. The working table and the utensil sterilizer are arranged along the side of the room which is visible from the corridor. The sinks and specimen closet are placed along the opposite wall in such a way that the likelihood that odors from these fixtures

Fig. 6. St. Louis Children's Hospital, St. Louis. View looking from the ambulance entrance down the corridor of the receiving end of the building. This shows the glass corridor partitions, as well as the glass separating partitions. It also shows the coved sanitary base, as well as its development into a bed and furniture stop inside the rooms, also shows the knee controlled basins which occur in every room, the legless radiators, and at the far end, the entrance into the examination room.

will be carried into the main corridor is minimized. The diet kitchen is equipped with sink, dish sterilizer, gas stove, plate warmer, tray rack, refrigerator, dumbwaiter and table, and opens both into the ward corridor and into the side corridor, thus facilitating service in both directions.

It is not the main purpose of the Children's Hospital to provide accommodations for private patients. In the earlier plans accommodations for private patients were not included. Later, it was found feasible to add a few private rooms by raising to a height of two stories the corridor running from the main building to the lecture hall, and utilizing the spaces on either side of this corridor for private rooms. Most of these private rooms have, unfortunately, a northerly exposure, preference having been given to the wards. But a visitor who enters the main building can pass directly to the elevator, and, emerging from the elevator on the second floor, can reach the private corridor without going through any part of the main ward.

Third Floor.—The third floor of the main ward building differs from the floor below in a few particulars, due to the assignment of this floor to infants. The subdivision of the west wing into single and two-bed rooms was, therefore, not followed on this floor. The main or sixteen-crib ward opens to the outer air on three sides and is connected with the adjacent loggias. Then there is a nursery, one separation room, and two moderate-sized wards. Attention is called to the arrangement of the utility room and bath rooms on this floor. The bath room, containing a slab bath and a long table, where a number of infants can be dressed at the same time, connects directly with the utility room; the latter is, in effect, a "changing" room, and it can be entered directly from both corridors. The specimen closet in this room is of the same type as that used in the other utility rooms. It is a metal cabinet, fastened to the outer wall and venting directly to the outer air through a louvre. The diet kitchen of the typical floor becomes here a milk laboratory. Obviously, infants require no dining room, and the space corresponding to the dining room on the floor below is here utilized for a chilled air room and a warmed air room, separated from each other by a double wall with an intervening air space and insulated from the main corridor by means of a vestibule or air lock. It may be of interest to describe the manner in which these rooms are respectively cooled and warmed.

In the chilled air room the refrigerating coils are encased in a pocket forming the north wall and lined with insulating cork. The source of supply is controlled by a thermostat maintaining a temperature at any point in the room. In a similar way the steam coils are controlled just beneath the under sill. An electric fan is installed adjacent to the refrigerating coils, and the air is thus circulated.

In the warm air room a similar pocket is formed in the south wall. In this case, however, the live-steam coils, which are regulated by ther-

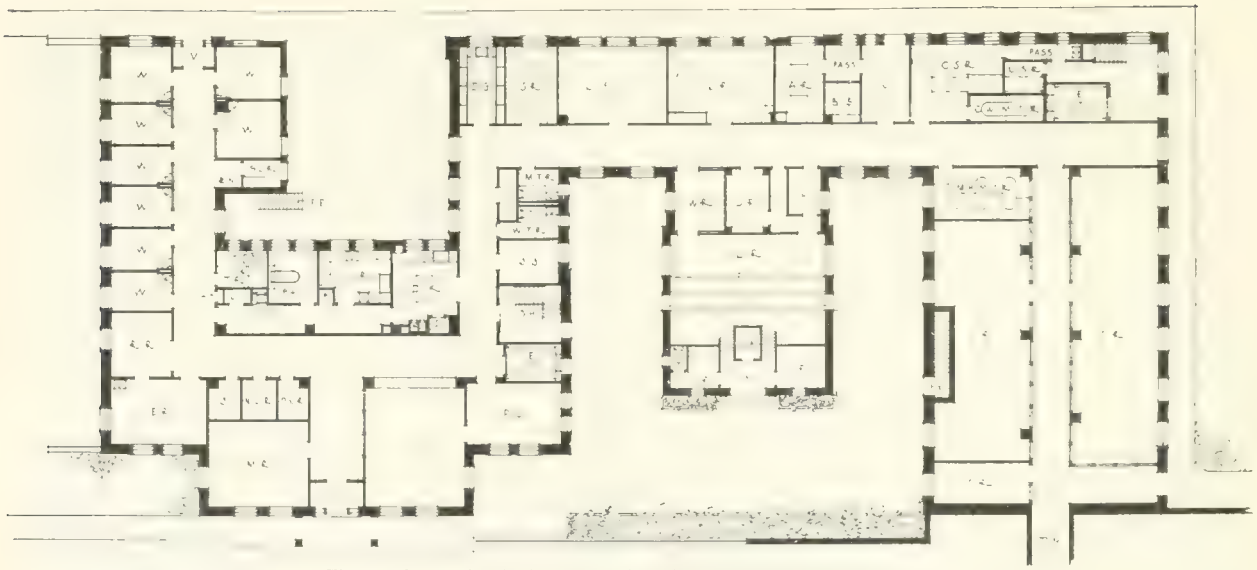

Fig. 7. St. Louis Children's Hospital, St. Louis. Ground floor plan.

mostatic control, maintain a temperature of 90 degrees. In addition a fan and motor are installed at the intersection of the south wall with the exterior wall, forcing outside cool air over the radiation in this room. Access to the various coils, fans, etc., is had by air-tight metal doors.

The corridor of the easterly wing of the building on this floor is a terminal corridor. At its northerly extremity there have been placed a dormitory and a bath room for wet nurses.

Leading from this wing there is an entrance upon the roof of the two-story connecting building, which it is planned to develop into an open-air ward at some future time.

Fourth Floor.—The plan of this floor is almost identical with that of the second floor. In the easterly corridor a side ward accommodating four beds takes the place of the day room on the lower floor; and the easterly corridor terminates at its northerly end in a surgical dressing room, equipped especially for plaster work.

Fifth Floor.—The general arrangement of the space, plumbing facilities, etc., of the hospital floors below is clearly indicated in the plan of this floor, which provides comprehensively for the accommodation and comfort of the resident physicians and interns, as well as those pursuing special research work. All of the residence portion, together with the library, is completely shut off by means of the corridor door from the directors' office, together with his facilities for examination, the chemical laboratory, private laboratory, bacteriological laboratory with its animal room and the calorimetry room.

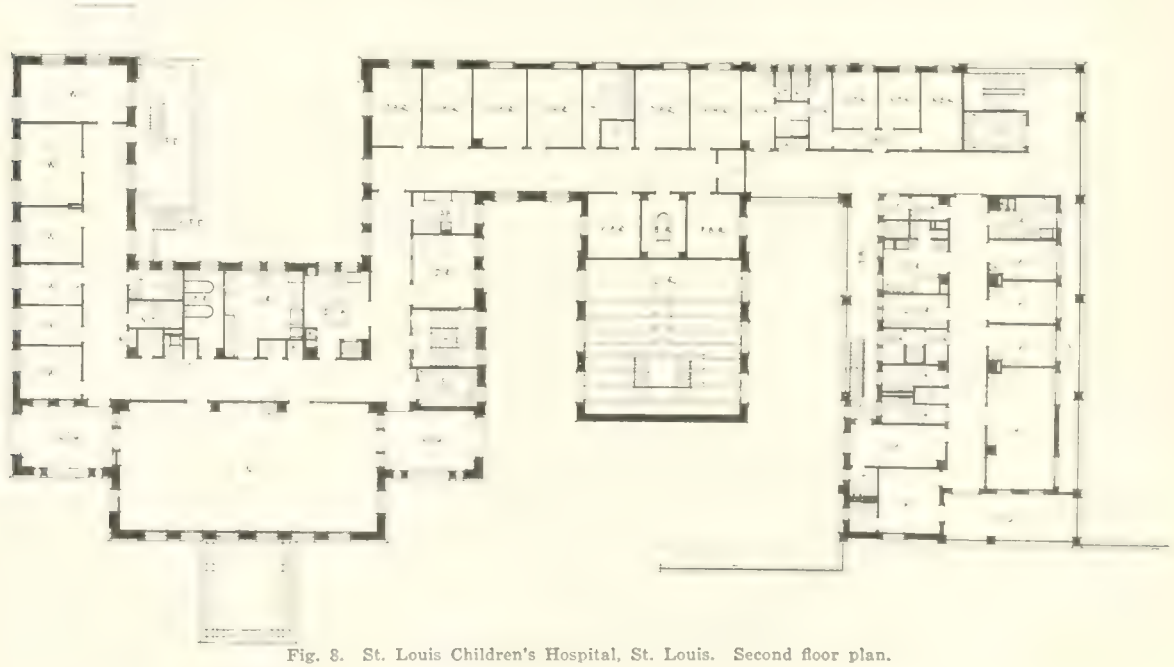

Fig. 8. St. Louis Children's Hospital, St. Louis. Second floor plan.

KEY TO ROOMS.
V. Vestibule.
E. Elevator.
W. Ward.
O. Office.
L. Lecturers' room.
T. Toilet room.
U. Undertaker's room.
C. Closet.
R. Refrigerator.
D. Dumbwaiter.
B. Blanket warmer.
S. Stretcher and supply room.
R-R. Reception room.
M-R. Manager's room.
P-O. Private office.
P-C. Porte-cochere.
E-R. Examining room.
S-R. Storage room.
S-S. Social service room.
E-R. Toilet room.
B-R. Bath room.
U-R. Utility room.
D-K. Diet kitchen.
W-S. Wire shaft.
L-C. Linen closet.
C-C. Cleaners' closet.
DG. Drug room
S-H. Stair hall.
R-N. Receiving nurse.
L-R. Linen room.
A-R. Autopsy room.
B-S. Body storage.
W-R. Waiting room.
L-R. Lecture room.
O-B. Operator's booth.
L-&-C. Linen and classes.
S-C-R. Students' cloak room.
W-T-R. Women's toilet room.
M-T-R. Men's toilet room.
N-C-R. Nurses' cloak room.
D-C-R. Doctors' cloak room.
PASS. Passage.
S-L-R. Soiled linen room.
C-S-R. Clean sterilizer room.
U-S-R. Infected sterilizer room.
C-W-M-S-R. Contagious ward mattress storage room.
M-H-S-R. Main hospital mattress storage room.
P-B-R. Private bed rooms.
LAB. Laboratory.
LOG. Loggia.
I-D-R. Infected dressing room.
C-D-R. Clean dressing room.
N-B-R. Nurses' bed room.
L-C-R. Linen and chart room.
D-E. Doctors' entrance.
D-D-R. Doctors' dressing room.
S-L. Sterilized linens.
V-B. Visitors' balcony.
S-B. Service balcony.
F-E. Fire escape.
W-N-W. Wet nurse ward.
C-A-R. Cold air room.
W-A-R. Warm air room.
M-L. Milk laboratory.
C-W. Cubicle ward.
D-P-&-O-R. Dressing, plaster and operating room.
D-R. Dining room.
INT. Interns.
RES. Residents.
D-O. Director's office.
B-L. Bacteriological laboratory.
P-L. Private laboratory.
C-L. Chemical laboratory.
CAL. Calorimetry.
A. Animal Room.
D-R. Dark room.
BAL. Balance room.
TUN. Tunnel to Barnes surgical ward.
N-T. Nurses' toilet room.
L-&-R-R. Library and recreation room.

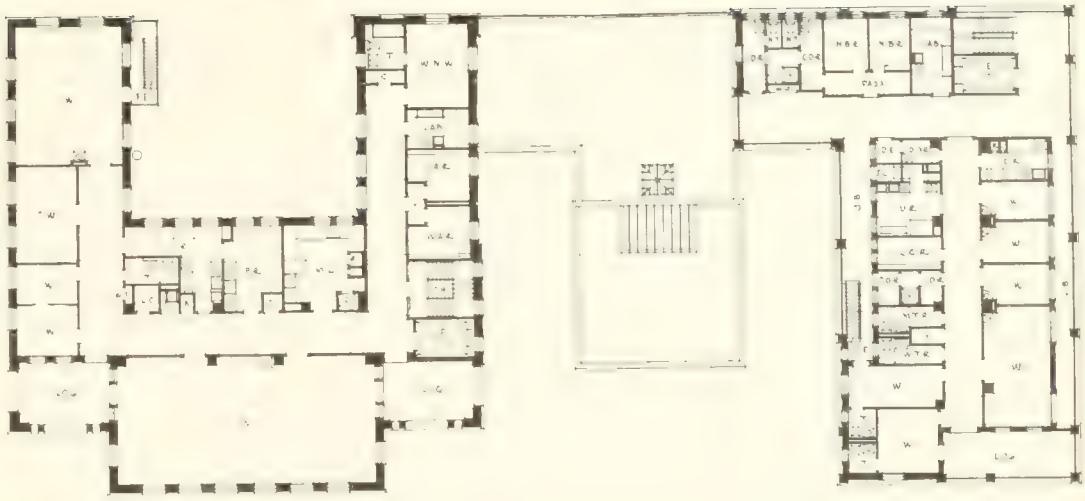

Fig. 9. St. Louis Children's Hospital, St. Louis. Third floor plan.

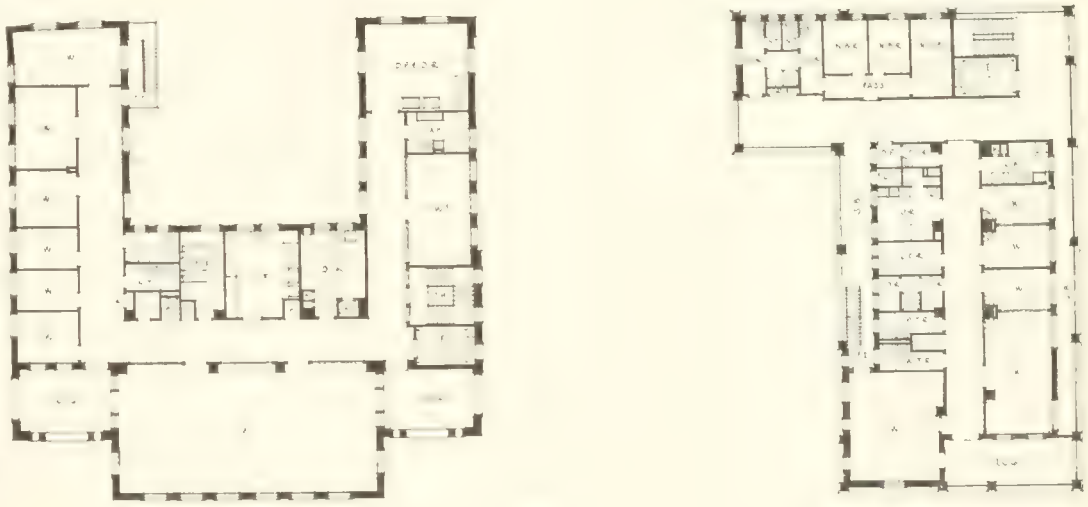

Fig. 10. St. Louis Children's Hospital, St. Louis. Fourth floor plan.

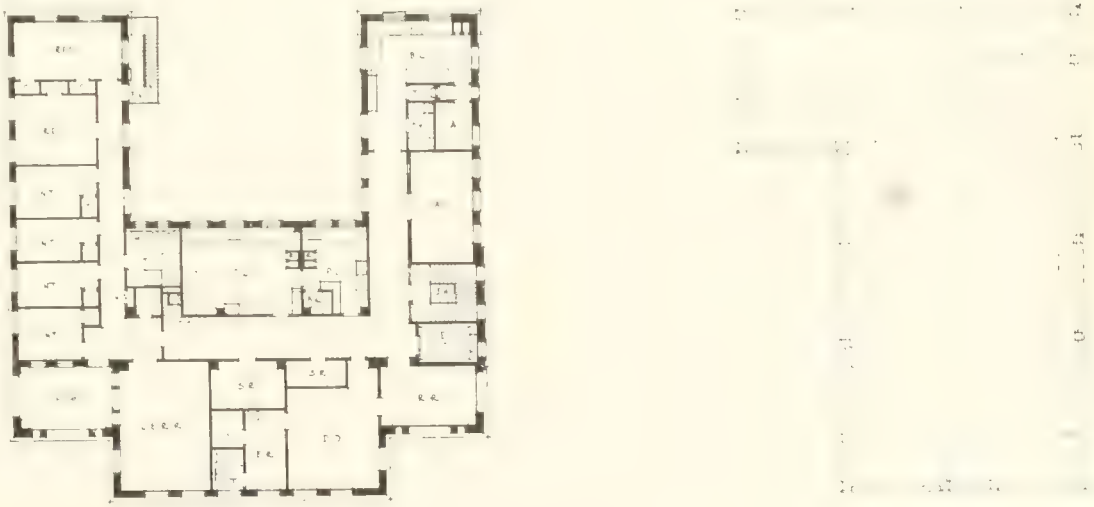

Fig. 11. St. Louis Children's Hospital, St. Louis. Fifth floor plan.

ISOLATED WARD BUILDING

In the basement of this building is the communicating corridor, connecting the whole Children's Hospital group with the buildings of the Barnes Hospital. A large part of this space is used for storage purposes. There is a separate room for the storage of mattresses, which are suspended on a trolley and thoroughly ventilated after sterilization. A built-in sterilizer is found on this floor.

On each ward floor is found an "island" suite for nurses or mothers. This includes an "infected" dressing and undressing room, with a connecting lavatory and toilet. From this room the attendant passes through the shower stall into the clean dressing room, which also has its lavatory and toilet. The clean room communicates with a short passage from which three bed rooms open, while the passage itself opens directly on the fresh air corridor. The "clean" nurse passes through the shower room to the "infected" dressing room before proceeding to the ward; coming from the ward her progress is in the opposite direction.

The verandas surrounding the island ward unit have already been described. From the open air corridor kitchen supplies can be delivered directly to the ward kitchen, the porter remaining outside. In the same way supplies can be delivered to the linen rooms and the service rooms, and sterilized linens can be collected by the laundry porter.

There is a special entrance and gown room for the visiting doctor; a utility room equipped with bed pan sterilizer and communicating with the linen sterilizing chamber; a linen and chart room; and a discharging suite consisting of undressing room, shower compartment and dressing room, the latter opening on the service veranda. There are separate toilets for male and female patients, two private bed rooms with individual toilets, and three one-bed wards, with running water in each. The largest room is designed for four beds or five cribs, and will be used especially for convalescents.

The peculiar requirements of this type of building, composed so largely of the "islands" above referred to, presented a peculiar problem in construction, and for the sake of economy as well as flexibility, this part of the group was designed as a concrete skeleton wherein each monolithic floor slab is supported at the outside edges by the exposed reinforced concrete columns, while all exterior enclosing walls are of special building tile and rough plaster, painted. It is worthy of note that there is absolutely no connection within the group between the isolated ward building and the hospital proper. The ingress and egress of patients, doctors and nurses, as well as food supplies, are through outside and separate channels. The total capacity of the three isolation units is thirty-five beds.

An integral part of the St. Louis Children's Hospital is its County Department, situated eighteen miles from the city. New buildings, with a capacity of fifty patients, have been erected and will be described in a subsequent issue.

THE WORK OF THE SURGICAL TEAM IN THE HOSPITAL[1]

Each Individual Is a Cog in a Machine That Should Respond to Every Impulse Given by the Chief—Some Essentials of Successful Cooperation

By DR. NOAH R. HARLAN, Freeport, Ill.

WHEN every mind and hand that has to do with the fulfilment of a definite accomplishment bends all efforts to that achievement regardless of personal desires—that is team work.

In the operating room the goal sought is the rapid and successful culmination of the operation.

The surgical team in the Freeport General Hospital consists of:

1. The chief surgeon.
2. The first assistant.
3. The second assistant.
4. The third assistant (often).
5. The surgical nurse.
6. The utility nurse.
7. The anesthetist.

And as aids:

8. The family physician.
9. The special nurse.

First, the surgeon—the chief of the team. It is he who really holds the key to good team work, provided his squad is normally efficient. If the surgeon chief comes to the operating room in an unhappy frame of mind only a miracle can avert poor team work, for the pilot is not holding steady. Little annoyances reach prodigious proportions and soon thought and technic are tremulously near unpardonable disorder. This is the severest test any team can be put to, but so well equipped should it be that by concerted and timely action its captain is coaxed back to his normal function,

[1] An address before the staff of the Freeport General Hospital, July 7, 1915.

or, failing in this, the day still saved by its even pull and balance.

It is easier for the surgeon chief to save his team on its "off days" than it is for the team to save its surgeon on his "off days," yet a good team is always prepared for the test, for the greatest of operators now and then suffers physical depression and mental irritability, as a result of manifold cares.

The first assistant should know what operation is to be done and should review the preparations of his chief, that no essential of the operation will be missing when they are needed. It is a body blow to good team work to find after the operation is in full swing that the scissors are not out or that the chromic gut is missing.

The first assistant should stand between the chief and extraneous annoyances from other members of the team. He should, for instance, when necessary, direct what kind of needle, ligature or suture should be prepared; and these instructions should be delivered in plenty of time for the preparation to be accomplished before the articles are actually needed.

Questions pertaining to the operation from lesser members of the team should be directed to the first assistant. Thus, with the first assistant guarding minute details, the chief is left free to pay undivided attention to his operation.

The surgeon will frequently consult with his first assistant, and so thoroughly in harmony should their thoughts be, when once a task is decided upon, that four hands work as controlled by one mind.

The first assistant is, of all the staff, the favored member. Working intimately with the chief he garners a rich harvest from a vast field of experience. With measured tread we, each of us, march daily to the terrestrial brink of life and when the surgeon's path meets the sunset he leaves to his first assistant the greatest of all treasures—tried truths and good-will that is read by a large clientele.

The second assistant should pretty much hold his peace and his retractors. Too many instructing and directing serves but to confuse. The second assistant serves as extra hands for the first assistant, who should be his chief. The second assistant should rarely invade the field of immediate action unless specifically directed to by the first assistant by either word, action or look.

The third assistant stands for the most part in the suburbs of activities with sterile gloved hands up (not down at his side or folded) waiting alertly for any cruder task that may present itself. If more retractors are required than the second assistant can successfully handle, the third man will find his opportunity to help.

Nurses on the standard surgical staff consist of:

1. The surgical nurse.
2. Two utility nurses.
3. The special nurse.

The head surgical nurse is rich in experience if she has kept her eyes open, for she has for weeks served her apprenticeship as utility nurse. Knowing the steps of the operation to be performed, she may easily follow the steps and have the requirements ready for each step before they are requested. Anticipation of the operator's wants is a big time-saver and acts often as a balm to incipient irritation.

If a standard operation is to be done, for example an appendectomy, it is the surgical nurse's fault if any ligature or instrument is lacking. Certainly, the surgeon or his first assistant picked them out, but the head nurse placed them in the sterilizer and should have carefully checked up their selection—as a pharmacist guards a doctor's prescription and is held by law responsible for sending out a poisonous draught even though so prescribed.

The surgeon had a thousand things to think of before he came to the hospital for this operation —saw a score of patients with a variety of troubles. The life of his surgical nurse is, for the time being at least, the life of a specialist, and he has just such a nurse to insure him the best surgical environment. As the operation closes one specter should invariably arise to confront the surgical nurse—the question, "Have we all the sponges?" The answer to this question she should always know, whether asked or not.

The utility nurse should be constantly present and not down in the basement or otherwise out of hearing part of the time. Should she be compelled to step into another room she must not forget to come back quickly. Her chief, the head surgical nurse, may wish her to pick up and resterilize fallen instruments, move hand bowls, get more sutures, remove specimen, etc., and no delay, once the operation is begun, is pardonable.

The utility nurse will see to it, without being requested to do so, that all visiting doctors and others permitted in the operating room are properly supplied with gowns. There may be present some relative or friend unable to stand the sight of an operation although believing at first he could do so. The utility nurse is his guardian and upon her shoulders his welfare rests, and she must see that he is safely and gently conducted from the room should faintness overcome him.

The government of the operating room during the operation in matters other than pertaining to the direct surgical procedure is in the hands of the utility nurses. They will see that visitors do not come dangerously near sterile paraphernalia and they will answer all questions of onlookers not particularly vital unless these be asked by visiting physicians, when the chief or his first aid will respond.

The anesthetist should, we believe, be a trained physician and one particularly versed in human mentalities. He should know fear and its antidote. He should know how, in five minutes, to ingratiate himself into his patient's confidence. The day when any available individual was, under the eye of the operator, considered safe to administer ether or chloroform is happily taking its place on the musty shelves of barbaric practices. The duties of the anesthetist and his responsibilities are great. We can touch them but lightly here. He should, from the moment of beginning the anesthetic to its close, pay strict and absolute attention to his patient. Not a word will be heard from a good anesthetist during even a three hours' operation unless it is to notify the surgeon of a failing vitality or in answer to a question put by the surgeon. Skill, a practical knowledge of psychologic matters, and an unrelenting watchfulness are the cardinal elements in the makeup of a reliable anesthetist.

I have a strong suspicion that many an occasional stormy post-operative course which mystifies the surgeon may owe its origin to an improperly given anesthetic.

As aids to the surgical team we have:

The family physician and the special nurse. It is well if the family physician can see the patient some thirty minutes prior to the operation to give her the comfort of knowing that this tried friend will be near her during the ordeal. Condoling with the patient just the moment before the anesthetic begins is to be condemned, for it breaks into that twilight sleep just at this time so desirable. The family physician may have acutely observed the patient for weeks and may offer valuable suggestions during the operation as to findings. Often he plays the part of third assistant.

The special nurse should be in the operating room the major portion of the time in readiness to perform any duty required. She should not at this time be in the patient's room reading a novel or in another part of the institution gossiping. She should see to it that the patient's bed is ready and warm. She will also support morally overanxious relatives with frequent encouraging reports during the ordeal of a long operation.

Every member of the surgical team, from chief to utility nurse, should be on time to the minute.

There are nine members in the team I have described. If one member delays the team ten minutes, a total of ninety minutes, or one and one-half hours' time is lost, the time of skilled scientists. So habitually prompt should each be, that on those rare occasions when he or she is not ready at the appointed minute all will know uncontrollable circumstances have intervened.

All should be quick and accurate in their part of the work. In private home life a wait of five minutes is not bad, but that same five minutes transferred to the surcharged atmosphere of the operating room is exactly half an hour.

The task before the squad is the quick, skillful completion of a successful operation and all should keep their thoughts riveted to that objective.

Surgeons, assistants and nurses, if their natures are tinctured with normal kindness, will never become so calloused as to forget the meaning of an operation to the patient or the patient's family. To the average layman the operating room is a red arena in which his chosen surgeon and his team mates cope with death, the prize at stake being the life of a loved one.

The environs of the operating room will often lay bare before the surgical team the very soul of the patient—quivering in its nakedness. With self-control seduced from its throne by the first stages of the anesthesia, one peers past the disabled guardian into the most secret chambers of that patient's character. The strong man of the commercial community is shown to the team as a blubbering coward and the refined woman sometimes mimics most accurately a trooper swearing. All these happenings must be kept ever inviolate by all members of the team. No look of surprise or word of comment should escape, and certainly mirth should not be provoked, for to the relative standing near it is far from a funny matter.

The spirit of the operation should so thoroughly permeate the room that no extraneous gossip is permitted once the anesthetic is begun. Discussion of politics, social affairs, or other cases will never arise unless the initiative is taken by the surgeon chief.

There is an appreciable percentage of selfishness in all normal human make-up and, as the women say of men, "the way to the heart is through the stomach," I believe the way to fan personal ambition is to pay attention to that inherent quality—selfishness. So I say to each member of the Freeport General Hospital's surgical team, keep trained to the minute and the glory of progress in the eighteen months of this institution life with its brilliant success now established will reflect honor and glory upon each of you.

THE STATE OF NEW YORK DEVELOPS AN AMERICAN SPA

Saratoga Springs, Under State Commission, to Be All That European "Cures" Have Been in the Past—And Something More

By ALBERT WARREN FERRIS, M. D., Superintending Director for the Reservation Commissioners

THE State of New York has acquired 160 wells, springs and bores, comprising approximately all the valuable and authentic springs in the city of Saratoga Springs. Thus the method of unified ownership which has been in vogue on the European continent for three hundred years, has been finally adopted in this country, and the result, scientifically as well as financially, will be of the greatest benefit to the commonwealth.

An important part of the value of the mineral waters lies in their application and utilization in the form of baths, since they contain, in supersaturation, great quantities of carbon-dioxide. In this respect they are not paralleled in this country by any springs east of the Rocky Mountains. The principal value of bath waters of this class, namely, alkaline-saline waters containing carbon-dioxide, is in the treatment of certain diseases of the heart and blood vessels, including certain stages of arterio-sclerosis; neurasthenia; gout, rheumatism and arthritis; anemia; and obesity. But the tonic effect of all baths in waters of this nature, graduated as to the strength of brine and as to the temperatures, as varied by the physician, is of great use in many conditions of reduced vitality, impaired nutrition, and impeded circulation, with the accompanying symptoms of lassitude, headache, anorexia and insomnia.

Fig. 1. The Casino at Saratoga Springs. Formerly the famous Canfield Club.

A surgeon frequently finds his patient in such a condition as to need "toning up," improvement of general physique and increase of confidence and nerve poise, before the operation can be performed with an expectation of the best results. A proper course of carbon-dioxide baths is of great avail in preparing a patient for the strain and drain of an operation, as well as in hastening convalescence and restoration to vigor after an operation.

It is a common custom to send the patient, before or after the operation, to a selected locality where freedom from noise, absence of dust, purity of air, and comparative absence of moisture combine with country advantages and out-of-door life to provide the best environment available. Saratoga Springs offers the advantages of mountain air without the depressing influences of a high elevation. The city occupies a central position on a plateau about 25 miles square, averaging about 300 feet above sea level in the town and its neighborhood. The soil is sandy loam, clay and sand, all glacial drift, and is in general very porous.

There is a large proportion of sunny days and the sky has the blue of the open country. In 1912, 115 days were partially cloudy and 128 days were sunny throughout, making a total of 243 days out of 366 days on which the sun shone. In 1913, 101 days were partially cloudy and 133 days were sunny throughout, making a total of 234 days out of 365 days on which the sun shone. The air is unusually fresh, dry and tonic, owing to the large number of trees and the fact that the air comes to us from the boundary hills—the Kayaderosseras, foot hills of the Adirondacks, and the Palmertown range of the same mountains, together with the Green Mountains of Vermont—which furnish breezes from either side and from the North. Thus one at Saratoga secures the advantages of a mountain climate without enduring

the rarefication of the atmosphere of a high elevation, a most favorable condition for cardio-vascular sufferers.

The city contains about 13,000 inhabitants. There are automobile roads running in many directions. There are miles of streets shaded by magnificent elms, with enough maples and pines, locusts, lindens, cherry and apple trees for variety. There are scores of attractive villas with broad lawns covered with grass as green as in England. There are famous hotels in the town and on the well known Saratoga Lake, as well as many excellent "pensions" and boarding houses.

Fig. 3. Drinking Fountain, Hathorn Drink Hall, Saratoga Springs.

The park of ten acres, with terraces, groves, ponds and Italian garden, presents a charming variety of hill and lawn, and includes within its limits the famous Congress Spring, as well as the Columbian; the former Canfield Club, now the Casino; and the impressive memorial erected by the village to the memory of the late Spencer Trask, president of the first reservation commission. The state owns three small reservation parks in the town, one of which surrounds the historic High Rock Spring with its great cone of tufa, first revealed to the white man by the Indians in 1643. The reservation property also includes the sixty-acre Lincoln Park, where stands the Lincoln Bath House, to which feeble patients are taken in wheel chairs from the trolley station, a quarter of a mile distant in the pine groves. Besides the Lincoln Park, the reservation has acquired and is laying out the 260-acre Geyser Park, two miles from the city, wherein are many spouting and flowing springs, a mile of picturesque Coesa Creek, and the ravine of the Willow Brook, into which flows the outlet of the Soft Sweet Spring, which produces an abundance of fresh water.

The reservation commission is not laying much stress upon the radio-activity of the Saratoga waters, although all of the waters have this feature, which the chemists connected with the U. S. Bureau of Mines state to be due to an unusual content of dissolved radium salts. The absurd claims and the unfortunate popularity of radium has tended to cause extreme conservatism in the minds of clinicians; but it is an undoubted fact that radio-activity is of marked benefit in gout, rheumatism and arthritis, and in conditions due to a deposit of inflammatory material, post-operative or otherwise.

The state has provided pamphlets for the information of physicians, patients and the general public, which give state-

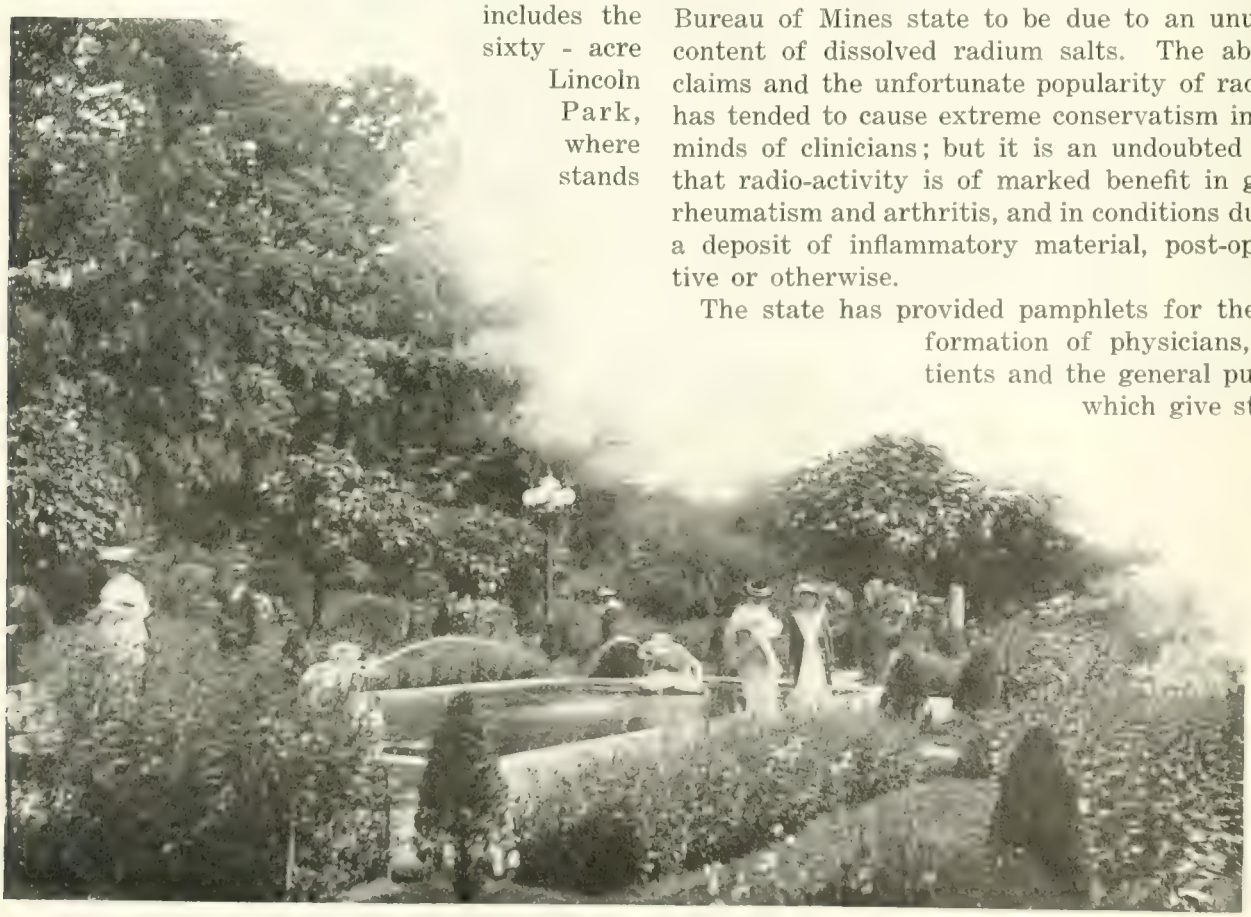

Fig. 2. Italian Garden, City Park, Saratoga Springs.

ments concerning the ingredients and uses of all the drinking waters, as well as the general theory of the use of the bathing waters. The state also furnishes a brochure on the carbon-dioxide baths. All of these pamphlets may be had upon application at the office of the reservation commission at Saratoga Springs.

For the robust patient, or for members of the family who accompany the patient to Saratoga Springs, many sports are available, including tennis, golf, fishing, driving, bicycling and boating, large parts of the year; as well as skating, tobogganing, sleighing and snow-shoeing in winter.

Saratoga Springs does not offer attractions to hospital patients, except to those of its own locality who can be accommodated in the excellent hospital built here about three years ago. The place appeals to invalids and semi-invalids such as have been in the habit of going abroad to the spas of England, France, Austria or Germany. It is destined to become a very attractive health resort of the best type, where women worn with domestic duties or the social engagements of a strenuous winter season may find rest and recuperation, as well as where overworked, overfed and underslept business and professional men may recover in large measure their health and largely increase their efficiency. Many scores of men of this type discover for the first time upon being examined by a life insurance physician, that their vitality is reduced, their digestive organs are much disordered, and that arterial changes have already taken place. Many of these people become patients immediately, very wisely deciding to secure such relief and improvement as wise management and skilful medical care can give them. Many of them are those unable to pass an examination which will permit them to secure life insurance, and many more are so improved that they continue their work with but slightly reduced efficiency, and live on in comfort for many additional years.

During the season that has recently closed, nearly 12,000 baths have been given in the three bath houses owned by the State. One of these is a very small affair with most modest equipment in which treatments are given at lower prices; another consists of an old spring house, a center building with two wings, which was comfortably fitted up with necessary furniture and equipment for various treatments, during the lack of funds necessary to erect the permanent elaborate state bath house which the commonwealth will finally build. The third is a building which was erected by a layman several years ago, and which the state bought and partly refitted, installing over thirty porcelain tubs for the Nauheim baths, a modern control table for giving douches, sprays, etc., hot air cabinets for neuro-vascular training, and electric light cabinets for eliminating treatment.

Provision is now made for handling one thousand patients per day during the usual bath hours, and in all probability so large an income will be derived from these bath houses during the next season or two that the legislators will be prompt in allotting as much money as is necessary to build the new ornamental state bath house needed, secure in the belief that not only will vast numbers of invalids be benefited, but that the state will secure a constant and large revenue from this source. In the old Hathorn Spring building a large room on the first floor has been

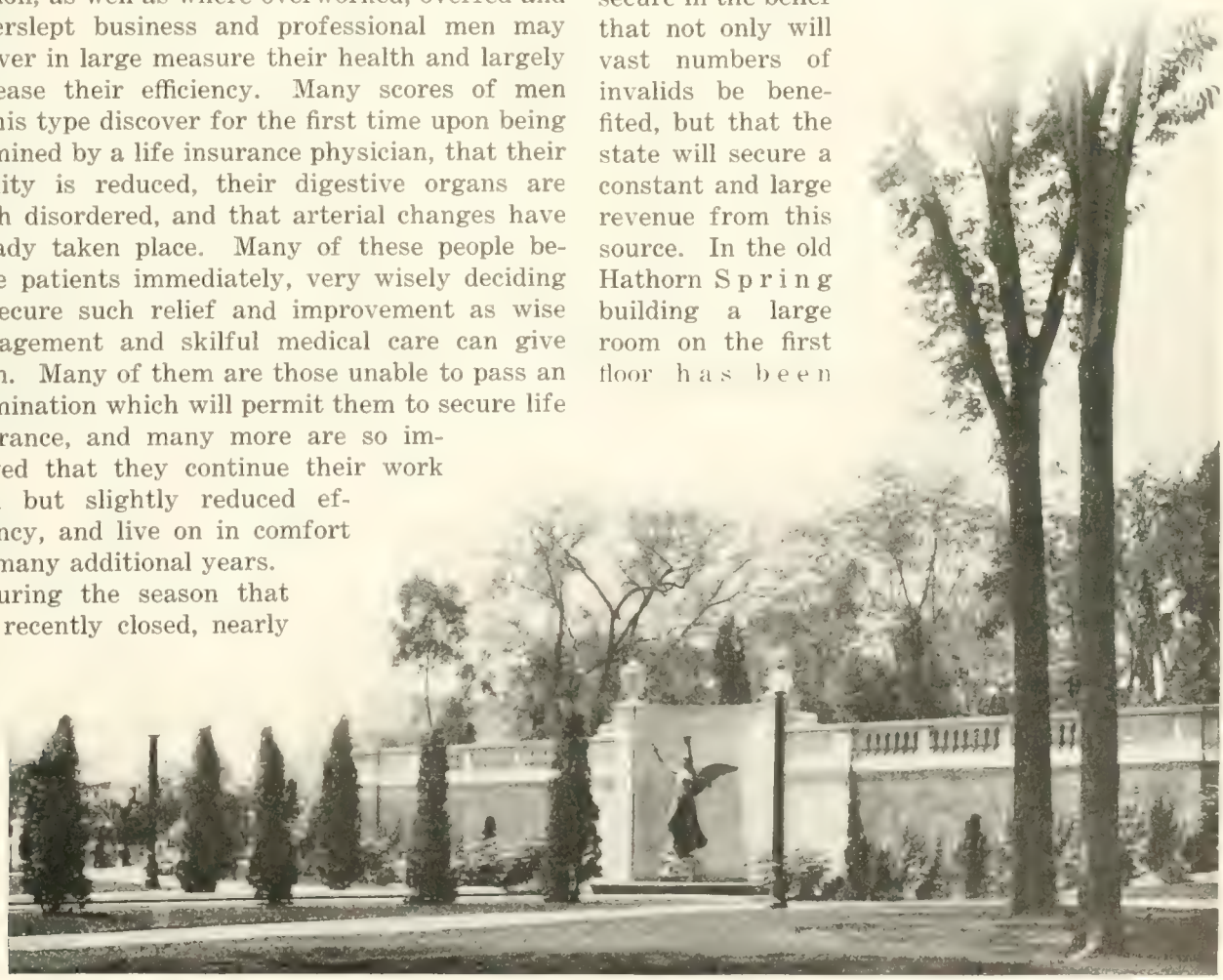

Fig. 4. Trask Memorial Fountain, Saratoga Springs.

fitted up as a Drink Hall, with tables and chairs enough to accommodate one hundred people at a time, with a multiple drinking fountain where a thousand can help themselves to the Hathorn and Congress waters during the day. Besides this Drink Hall there is a free entrance to the Hathorn Spring, where multitudes can obtain as much water as they desire during the entire day. On each of several days during the summer 1,700 people passed through the five-cent pay entrance to the Drink Hall, most of them coming in the early morning for the before-breakfast waters. Free drinking places were also maintained in the beautiful sunken garden about the Congress Spring, at the Columbian Iron Spring, and at the High Rock Spring, where the water wells up as of old in the hollow of the famous High Rock Cone, first seen by a white man in 1643, and without doubt visited by the Indians for many centuries before that date. Arrangements were made for people to help themselves to the water of the Emperor Spring in its little sunken approach, as well as of the Karista Spring, the famous iron spring in the Geyser Park. The visitor may help himself, from bowls, to the water of the Awassa Spring, of the Champion No. 2, or from the spouting jets of the twin springs, Zalama and Alnoba, these constituting four of the seven springs in Diondaroga, "The Vale of Springs."

The drinking waters of Saratoga Springs are divided into three classes:

1. Saline-laxative, comprising Hathorn No. 1, Hathorn No. 2, Hathorn No. 3, Coesa, Emperor, Peerless, Royaneh (formerly Pavilion), Congress, Orenda, and others.

2. Alkaline-saline, with alkalinity predominating over the salinity; including Geyser, Zalama and Minnonebe. Geyser and Minnonebe, the former decidedly diuretic, are both used as table waters, after part of their lime, magnesium and iron has been removed by sedimentation and filtration.

3. Alkaline-ferruginous or chalybeate waters, comprising Columbian, Congress and Karista. The last named is an unusually strong iron water, varying in this constituent widely from time to time, but generally assaying over 600 milligrams per liter of ferrous bicarbonate.

All the waters are naturally surcharged with a large amount of carbonic acid gas. They are used —according to the choice made by the physician, and according to the patient's necessities—in digestive disorders, especially intestinal stasis, inactivity of the liver and flatulence; in certain stages of kidney disease; in anemia, diabetes, gout, rheumatism and arthritis. The fact that magnesium bicarbonate has an anesthetic effect and therefore acts without discomfort or pain, and also the fact that the waters are most of them palatable and attractive, will result in their large use for the disorders mentioned by thousands of patients who have heretofore gone to Carlsbad and other foreign spas.

A proper diet, proper exercise and judicious use of the Saratoga natural waters have resulted in marked and prompt benefit in a very large number of cases of disordered metabolism, without any other treatment.

Twelve paths were laid out in Geyser Park, on various levels and traversing various distances, thus providing a beginning of the Stokes-Oertel system of hill climbing, so popular and valuable at some of the German spas, and of such advantage in the re-education of the heart muscles in selected cases of cardio-vascular disease. Some of these paths pass along murmuring brooks in romantic ravines, and some traverse the edges of steep declivities heavily wooded with hemlocks and hard wood trees; some pursue a meandering course on a fairly level plain; some wind in and out under the shade of pine groves or clusters of white birches.

The 110th annual meeting of the Medical Society of the State of New York will be held on May 15, 16, 17 and 18, 1916, during which period many physicians and their families will take advantage of the opportunity to inspect the work of the state reservation and the equipment and appliances available for the treatment of the classes of disease already enumerated. Many will enjoy traversing the old Indian trails, worn by the moccasins of the Mohawk Indians who inhabited this region as they went forth on their hunting and fishing expeditions, or on the great northern war trail, or on the great trading trail that leads over through the Sacandaga River Valley into the valley of the Mohawk River. Many will enjoy visiting the battle fields of old Saratoga and Bemis Heights, where one of the fifteen decisive battles of the world was fought, ending in the routing of Burgoyne and the final disappearance of the British from the North American colonies, and leaving the thirteen states cemented into a firm and permanent union.

For all grades of active people, for all varieties of men, for those with slender as well as those with well-filled purses, Saratoga Springs is destined to make provision, so that none who need the remedial help of its waters shall be denied them, in order that their health-giving virtues may be as widely enjoyed as is possible.

The present commissioners are Frederick W. Cameron, of Albany, George C. Van Tuyl, Jr., of Albany and New York; and former Senator Frank

Fig. 5. Congress Spring Park, Saratoga Springs.

Fig. 6. Coesa Spring. One of the geysers at Saratoga Springs.

Fig. 7. Congress Spring, Saratoga Springs. Note the festal nature of the scene.

N. Godfrey of Olean, who serve without remuneration, and under whom the following official staff carry on the work of development and maintenance of the department: Louis W. Noland, secretary; Charles C. Lester, counsel, whose remarkable knowledge of the geology and mineralogy and hydraulics of the region has been invaluable to the commissioners; Professor Charles G. Anthony, C. E., consulting engineer, who has devised and designed much of the equipment and has suggested and created certain of the features of the reservation work, such as the beautiful sunken garden of the Congress Spring; Herbert Ant, the chemist, who enjoys a remarkable reputation as a water and bacteriological analyst; and Albert Warren Ferris, M. D., who has furnished for two years the ideas concerning the medical aims and remedial developments necessary to lay the foundation for the health resort, in which matter the reservation commission takes the lead and formulates the policies and provides the actual installations necessary in administering treatment.

Allusion has been made to the Trask Memorial, erected by the citizens of Saratoga Springs to the memory of Spencer Trask, financier, publicist and perhaps the foremost citizen of his day in recognizing the value of the subsequent development of Saratoga by the State, and in consistently advocating and contributing to all advancements made. Without any exception, the most attractive single feature in the City of Saratoga Springs is the noble bronze figure by Daniel Chester French, sculptor, entitled, "The Spirit of Life." This stands in the center of a limestone niche, surmounting a rock through which a fountain gushes forth at her feet. The figure holds aloft in her right hand a sprig of pine and in her left a patera, from which drip silvery threads of water, as if offering to the world the life-giving waters which Nature has provided us lavishly and which have bubbled up and spouted forth for centuries, inviting use and development by the citizens of our State, who have been so tardy in recognizing the virtues and great abundance of its mineral fountains. This statue in its setting constitutes the "Trask Memorial."

A full meed of praise should be given to former Commissioner George Foster Peabody, who for over five years was the genius of this entire development, and lent his extremely valuable aid in initiating as well as perfecting almost every feature of the enterprise.

To Senator Edgar Truman Brackett is due the fullest acknowledgment for the inspiration of putting the springs under state control and ownership, for securing the passage of the enabling legislative measure, and for fostering and aiding in every way during the unfolding and progress of the work. The Brackett gateway into Congress Park has been erected by fellow-citizens of Saratoga Springs as a slight testimonial to Senator Brackett's successful labors and permanent interest.

URGES EARLY EYE CARE OF CHILDREN

New York Health Department Makes Report Showing Results in 5,000 Cases

The following conclusions, from a recent weekly bulletin of the Department of Health of New York City, are the result of nearly five thousand complete and careful refractions performed at the Health Department's Pleasant Avenue Clinic:

"1. In accordance with the observations of previous investigators, myopia or short sight is a condition rarely present at the beginning of school life, but which gradually increases with the age of the child, so that at the age of sixteen years almost one-half of our cases had more or less myopia.

"2. Children with hypermetropic conditions became myopic, the percentage of emmetropia or normal eyes remaining about the same.

"3. That the correction of the hypermetropia and astigmatism with the constant wearing of the correcting glasses will prevent the development of myopia in many instances is the belief of most ophthalmologists. Myopia in its high degrees becomes more than a mere handicap in life's race, producing degenerative changes, detachment of the retina, with ultimate loss of sight; therefore, apart from the relief and improvement in vision afforded by the wearing of glasses in cases of hypermetropia and astigmatism, the early refraction of children to prevent the development of myopia is most important.

"If a child has a high degree of hypermetropic astigmatism, mixed astigmatism or myopia of medium or high degree, with vision after correction of only $^{2}\!/_{50}$ or less, it should be placed in special classes, with a curriculum that minimizes the amount of near work. There should be close cooperation between school authorities, school nurses, school doctor on the one hand and ophthalmologists on the other. Education boards should employ some one interested in the conservation of children, preferably an ophthalmologist, in an advisory capacity. Such an officer could work to improve many existing defects, such as improper desk adjustments and poor lighting. The regulation of type and paper in school books is another matter to come under such an officer's control.

"Above all, let the slogan be 'refract the children early and compel the wearing of proper correcting lenses.'"

Elizabeth Steel Magee Hospital Opened

The new Elizabeth Steel Magee Hospital for Women, at Forbes and Halket streets, Pittsburgh, Pa., which has been described in detail in an earlier number of THE MODERN HOSPITAL, was formally opened October 27, with elaborate dedicatory ceremonies. The dedicatory address was delivered by Dr. Walter William Chipman, professor of obstetrics and gynecology of McGill University, Montreal, Canada. The hospital is a gift to the city of Pittsburgh from the late Christopher Lyman Magee as a memorial to his mother. In their present state the buildings, with their equipment, have cost $650,000. When the hospital has been entirely completed it will represent an expenditure of $750,000, and will accommodate 300 patients. Dr. Charles Edward Ziegler is medical director and P. W. Behrens manager of the institution.

A new municipal hospital for contagious diseases has recently been opened at Jamestown, N. Y.

HOSPITAL FLOORS—COSTS, ADVANTAGES AND PRACTICAL POINTS

Many Problems Incident to Selection of Flooring Materials—Methods of Laying Also of Great Importance—Extra Costs for Preparing Floor Beds Must Be Considered

By RICHARD E. SCHMIDT, Chicago, Member of the American Institute of Architects

THE question of what kind of floors to select for a hospital is so insistent and important that a table of comparative prices and a statement of their relative qualities and merits is of value to hospital builders.

If pipes and conduits can be laid between the joists so that wood flooring can be nailed directly to the sub-flooring and no special nailing foundations are required, floors of wood are the cheapest in a building of wood floor construction, but the question of "deadening" the floors enters, and if a good quality of deadening is required the whole cost is increased considerably. This does not occur in the case of buildings of fireproof construction, either reinforced concrete, or steel and hollow tile—at least not to the same extent.

The costs per square foot of the various types of wood floors, except No. 11, are based on using $^{13}/_{16}$ inch thick by 2¼-inch face, tongued, grooved, end matched, blind nailed floors, underlaid with one layer of deadening felt, weighing two pounds per square yard.

Item No. 1—Clear rift sawed yellow pine, 10c.

Item No. 2—Clear birch, 11c.

Item No. 3—No. 1 birch, 8½c.

Item No. 4—Clear maple, 9½c.

Item No. 5—No. 1 maple, 8½c.

Item No. 6—Factory maple, 5½c.

Item No. 7—Clear quarter-sawed white oak, 15c.

Item No. 8—Clear plain white oak, 10½c.

Item No. 9—No. 1 plain white oak, 9½c.

Item No. 10—Clear plain red oak, 10½c.

Item No. 11—⅞ inch by 6-inch matched No. 1 yellow pine sub-flooring, 4½c.

Item No. 12—Traversing, planing and hand-scraping, 4c.

Item No. 13—Traversing, planing and machine scraping, 2½c.

Item No. 14—"Deadening" or "deafening" on wood sub-construction is sometimes attempted by the use of felt paper, which is included in the above unit costs, but it is not likely to be efficient. More expensive materials are required, and these consist of so-called quilting or mineral wool, or mortar, or flax, or cork in combination with wooden strips, which are required to provide proper nailing for the flooring. A fair deadening probably costs 8 cents per square foot, and other grades as high as 11 or 12 cents per square foot. One of the best forms of deafening consists of sheets of cork one inch in thickness, on which all kinds of plastic and tile floors can be laid, and can be obtained for 10 cents per square foot laid in place on wood or cement sub-floors. Wood flooring can be laid on it by nailing through into a wood sub-floor.

Item No. 15—Wood floors in buildings of fireproof construction must have wood nailing strips which are usually secured to the sub-construction by ⅛x1-inch iron strips about 8 inches long nailed crosswise on the underside of the wood strips about three feet apart. The dimensions of these wood strips are 2 inches thick, 3 inches wide, beveled on one side and laid 16 inches center to center. The space between them is filled with cinder concrete; such strips and concrete cost 5 cents per square foot.

Item No. 16—The cost of finishing wood floors must be added; close grained wood, such as yellow pine, maple and birch, require no filling and can be finished with three coats of varnish, or a coat of varnish and two coats of wax. Such finishing costs about 2½ cents per square foot.

Item No. 17—Open grained wood, such as oak, requires a filler in addition to the varnish, and such finishing costs about 3 cents per square foot. Maple and birch are sometimes run so true on new machinery that they can be used without traversing, planing and scraping, and the following is an illustration of the cost when laid directly on an underfloor in a building having wood floor construction. For this cost, Items No. 4 and No. 16 must be added, making a total of 12 cents per square foot.

If a deadening is required, Item No. 15, ranging from 5 to 11 cents a square foot, must be added, depending upon the kind of deadening selected.

For the cost of a clear plain white oak floor, add Items Nos. 8, 13 and 17.

Or, if the cost of the same kind of flooring in a fireproof building is required, add Items Nos. 8, 13, 15 and 17, amounting to 21 cents per square foot.

Portland cement floors cannot be laid with a uniform hardness and finish. Troweling and mixing cannot be done so perfectly that every portion of a floor will have the same proportions and the same amount of troweling, consequently the surface wears differently. It must be laid with joints unless one is willing to risk the danger of irregular

cracks. This material is, however, suitable in some spaces in an institution such as basement corridors and storerooms.

A new process of finishing Portland cement floors has found considerable favor and appears to be durable. It consists of the heating of cement floors with inverted gasoline torches and filling the wearing surface with a colored mixture of paraffin and beeswax. Heat causes this composition to penetrate to a depth of ⅛ to ¼ inch. It makes the surface very dense, waterproof, dustless and provides a much more pleasing color than the ordinary cement floor. This finish can be obtained for a cost of from 6 cents to 8 cents per square foot, depending on the quantity.

Special cement paints for cement floors must have at least three coats to cover properly, and will cost approximately 5 cents per square foot.

A cement floor consisting of 3½ inches of coarse concrete and ½ inch thick wearing surface will cost about 10 cents per square foot.

Very good cement tile made by hydraulic pressure are obtainable. These have an unusually smooth, dense surface for cement work and are made in a variety of colors. The most favored dimensions are 6 by 6 inches. Such floors are suitable for every use in a hospital with the possible exception that a denser material should be selected for operating and dressing rooms. The average price of such tile, including the foundation concrete, is 50 cents per square foot.

Terrazzo floors consist of Portland cement with an addition of marble chips laid in place in a plastic state, rolled, ground and sometimes polished. These are subject to cracking along irregular lines, the same as plain cement floors. The cracks can be concealed by laying lines of tile or marble cubes to divide the floors into squares having an area of 75 to 100 square feet. The average price is 27 cents per square foot.

Artificial marble tile is made practically in the same manner as the above described cement tile, but it contains a coarse aggregate of marble chips; these tiles are ground on a rubbing bed and polished. They are also obtainable in a variety of colors and mixtures and have about the same appearance as terrazzo floors. Cracking or separation is taken up by the joints. The average cost of such flooring, including foundation, is 45 cents per square foot.

The densest and hardest material is undoubtedly desirable for operating and dressing rooms, and for these one of the vitreous or ceramic clay products should be used, such as ceramic mosaic in small squares, of which the average price is 40 cents per square foot, or 6-inch by 6-inch vitrified or flint tile, average price 60 cents per square foot, or 2-inch or 3-inch hexagon tile, average price 52 cents per square foot.

Quarry tiles are suitable for entrances, loggias, solaria, roof gardens, etc.; the average cost of these, including foundation, is 50 cents per square foot.

American encaustic tile floors also cost 50 cents per square foot.

The prices for cement floors, cement tile, terrazzo, artificial marble, ceramic mosaic, flint, quarry and encaustic tile include about two inches of foundation concrete, for at least this thickness is required to provide the proper foundation. This depth is usually sufficient to enclose the ordinary conduits if these are laid on the sub-wood floor or on the sub-construction of a fireproof building.

Conduits and pipes can be enclosed in a sub-construction so that its upper surface can be roughly troweled or screeded to be ready to receive one of the floorings described below, but if it is not so prepared the cost of about two inches of concrete, which is the thinnest durable thickness, must be added to their cost.

Linoleum, cork and rubber tile floors require troweled surfaces. The untroweled costs about 7 cents per square foot, the troweled 9 cents per square foot.

Rubber tile would undoubtedly be very serviceable and satisfactory in operating and dressing rooms; the average cost is 80 cents per square foot, to which must be added the cost of the sub-floor.

The flooring of wards and private rooms is undoubtedly the most important, on account of their proportion of the total floor area.

Wood as flooring was used for this almost wholly in the past. In recent years terrazzo, magnesia composition and linoleum have been used to a considerable extent.

Magnesia composition, known by trade names, such as Acmetile, Asbestolith, Asbestone, Atlas Floor, Doloment, Flexotile, Karbolith, Kellastone, Marbleoid, Monolith, Mineral flooring, Torgoment and Velvetile and many others are plastic floors which are laid and troweled in a variety of colors. Such flooring can be applied directly on wood, provided that steel lathing is secured to the sub-floor, but such floors are noisy on wood construction without the use of a good deafening and an extra underflooring; in large quantities the material itself, in about ½ inch thickness can be obtained for 20 cents per square foot, but the average price is 25 cents per square foot; the metal lathing and deafening is likely to increase this to 30 or 35 cents per square foot.

If the sub-construction of a fireproof building enclosing the conduits is screeded, the cost of a

½ inch thickness of magnesia composition will not exceed the prices mentioned, but if 2½ inches of foundation is necessary, the total cost will be from 27 to 32 cents per square foot, depending upon the quantity.

Granite or marble chips are sometimes mixed with the magnesia and the grinding of the floor brings out the marble or granite so that its appearance resembles terrazzo. If this is done, the cost averages from 30 to 35 cents per square foot, plus sub-concrete, if it is necessary.

Linoleum is probably the most desirable flooring for wards and private rooms, taking cost and qualities into account. It is more resilient and a poorer conductor of heat than any of the floors hereinabove mentioned, and it is, therefore, less noisy, less tiresome to those walking on it, and not as cold underfoot as any of the others. Its price fluctuates with the price of linseed oil; the average cost of this material, solidly cemented to a sub-floor, is 15 cents per square foot. This price is for the battleship grade, which is the heaviest quality, about $^{7}/_{32}$ inch in thickness.

A wooden sub-floor, unless of narrow strips well seasoned and smooth, does not supply a good foundation, for every inequality of the sub-floor will eventually be apparent in the linoleum. The edges of curling floor boards become especially noticeable. Inasmuch as the ordinary underfloor of a building of wood construction consists of wide boards, it is not suitable for foundations for linoleum. Further, as the conduits, pipes and deafening require space on top of the sub-floor, it is necessary to supply nailing strips and another sub-floor which will increase the cost 10 cents per square foot.

It is quite feasible to provide troweled surfaces on a sub-construction of reinforced concrete buildings suitable for linoleum, whereas it is always necessary to provide an additional troweled concrete on the sub-construction of steel and hollow tile fireproof buildings. In making an estimate it must be remembered that the sub-floor for magnesia composition need not be troweled, while that for linoleum must be smoothed and troweled. The least cost of a linoleum floor is, therefore, 15 cents per square foot, laid on wood, 17 cents in a reinforced concrete building having a troweled structural floor, or about 23 cents per square foot where it is necessary to provide an additional layer of troweled Portland cement concrete. The price of imported battleship linoleum has advanced about 20 cents per square yard on account of unusual conditions. Moire linoleum cannot be obtained at this time. The prices given above include the laying and cementing of the linoleum solidly to the sub-floors.

Linoleum floors suffer from the excessive application of water. They should not be flooded but mopped without the use of too much water. Frequent wetting and drying is the cause of shrinkage and the opening of unsightly and undesirable cracks and joints.

Plain linoleum tracks easily with dusty as well as muddy footprints, and an irregular figured linoleum such as moire linoleum is very desirable. Its coloring is neutral and harmonizes better with wall decoration than the ordinary tan, green or red battleship linoleums. Moire linoleum, however, is not made of the same thickness as the battleship.

Corridors should have noiseless floors in combination with borders, bases and plinths of harder material, and for these linoleum is recommended.

It should be allowed to stretch and season on the floor for several weeks before it is cemented solidly to the sub-floor, and the joint between the edges of the linoleum and the hard floor should be left open for a width of about two inches and filled with magnesia composition only after the linoleum has taken its final dimensions and if the strip is filled with black or a color of proper contrast to the colors of linoleum and the harder flooring along the baseboard, an effective combination will be obtained.

An elastic composition similar to rubber or linoleum, ¼ inch in thickness and cut into 6 by 6 inches, 3 by 3 inches and other sizes, is called "Dreadnought" by one manufacturer, "Arrowlock" by another, and "Linotile" by still another. These pieces are laid in pattern-like tile, resulting in a durable floor, which is more ornamental than plain linoleum. The material is obtainable in blues, grays, reds, buff, black and green, so that a variety of pleasing combinations can be made. The material can be nailed and cemented to wood sub-floors or cemented to troweled Portland cement. The cost is 55 cents per square foot.

Asphalt flooring may be suitable in the service departments of very large public institutions such as county or state infirmaries, and the average cost of these for a thickness of ¾ inch ranges from 17 to 25 cents per square foot, but the color is unsatisfactory and it also requires a foundation of Portland cement concrete costing at least 9 cents per square foot.

Insulite is a new plastic material about the consistency of ordinary lime mortar and which is laid to a thickness of about ⅛ inch. Its color is a dark reddish brown and is as soft to the tread as linoleum; it is not attractive for wards, corridors, or any of the rooms occupied or used by patients, but it appears to be very suitable for laboratories, laundries, large kitchens and for im-

proving old, defective Portland cement and wood floors in the service portions of hospitals. The makers state that it is a combination of mineral rubber, asbestos fibre and a calcium, that it is absolutely water and dampproof and resists all kinds of acids, and under no circumstances will it crack, chip or peel off. A prominent engineering laboratory has made the following report:

"Pieces of steel were given two coats of Insulite and after properly drying were immersed for 48 hours as follows:

"Immersed in 50 percent nitric acid, coating unaffected. Immersed in 50 percent hydrochloric acid, coating unaffected. Immersed in 50 percent sulphuric acid, coating unaffected. Immersed in 50 percent caustic acid, coating unaffected.

"A crockery dish was coated inside with Insulite, and after drying, a quantity of burned lime was allowed to slake in the dish. The Insulite was absolutely unaffected."

The average cost is from 15 to 18 cents per square foot.

Wood, linoleum, cork and most of the magnesia compositions should not be used under plumbing fixtures or in rooms in which considerable water is used. The other kinds of flooring will resist the action of water.

The weights of floor materials and their foundations also affect the cost of a building by requiring a greater or lesser strength of the structure to adequately carry the respective weights. This factor is of considerable moment in large buildings, but too involved for consideration in this article.

The advantage of sanitary baseboards which are flush with the wall surfaces and joining the floor by a curved surface are so obvious that the old-fashioned projecting bases which join the floor at right angles are now used but rarely. Wood cove bases are rather impracticable, inasmuch as plaster patching must be done after the base has been set flush with the plaster. The moisture of the plaster swells the wood, later it shrinks and leaves a crack which is difficult to fill. Such bases, including the cost of patching of walls probably cost 25 cents per lineal foot. Another disadvantage is that they can hardly be made more than two or three inches in height and do not protect the wall surface from the effects of scrubbing water.

Baseboards of material which can be placed continuously, i. e., jointless, appear to be most satisfactory, although artificial marble baseboards are very good, inasmuch as they can be made in lengths of four to five feet. Terrazzo, magnesia composition and magnesia composition with marble aggregate are included in this category.

Artificial marble, terrazzo and magnesia composition with a marble aggregate present a better appearance than plain magnesia composition bases, for they are rubbed by hand or machinery, which removes the inequalities of plain magnesia composition which is left with a troweled or hand-run surface.

Flint, quarry, white glazed and other forms of tile bases are made in small pieces about 6 inches long and 6 inches in height. The great number of joints makes this form of base less impervious and more difficult to lay straight and true.

Terrazzo and magnesia composition baseboards require placing of grounds for the stopping of the base or of wall plaster. These grounds must be wood or steel and cost from 3 to 10 cents per lineal foot. This cost must be added to the cost of the baseboards.

The following are average prices per lineal foot of sanitary cove bases six inches high flush with wall plaster:

Portland cement	$0.20
Terrazzo	.35
Artificial marble	.70
Flint tile	.85
Plinths, each	.65
Quarry tile	.75
Plinths, each	.75
White glazed tile base	.75
Plinths, each	1.00
Magnesia composition	.25
Ground out magnesia composition with marble chips	.50

Some contractors do not deduct for doors of ordinary dimensions, and in return do not charge anything extra for plinths. This is generally the custom among contractors for terrazzo, artificial marble and magnesia.

Magnesia composition is the most suitable material for baseboards in combination with linoleum, cork and rubber floors, especially if they are made in combination with a border of the same material, both base and border containing a marble aggregate and finished by grinding and polishing.

Physical Examination of Kitchen Workers

The New York Health Department recently sent out letters to all the hospitals of greater New York urging physical examination of their kitchen staffs, and citing a section of the revised sanitary code which reads as follows:

"Sec. 146. Employment of persons affected with infectious or venereal diseases prohibited. No person who is infected with any infectious disease, or with any venereal disease in a communicable form, shall work or be permitted to work in any place where food or drink is prepared, cooked, mixed, baked, exposed, bottled, packed, handled, stored, manufactured, offered for sale, or sold. Whenever required by the sanitary superintendent or director of the bureau of food inspection, of the department of health, any person employed in any such place, shall submit to a physical examination by a medical inspector of said department. No person who refuses to submit to such examination shall work or be permitted to work in any such place."

LIBRARIES AND THEIR MANAGEMENT IN STATE HOSPITALS[1]

Books and Periodicals Are Useless in Institutions Unless the Library Is Systematized and in the Hands of a Competent Person—Patients Sometimes Make Good Librarians—Three States That Are Doing the Work Well

By MIRIAM E. CAREY, Supervisor of Institution Libraries, Minnesota State Board of Control

EVERY superintendent who has established a library in his hospital has found sooner or later that it would not run itself. There must be organization and system before a collection of books becomes a working library, and there is no system which operates automatically or is self-sustaining. In each library there must be some responsible human being to keep it going.

How to supply this need is a problem not yet fully solved, and it is the purpose of this paper to call attention briefly to the method in operation at present in three of the middle-west states, namely, Iowa, Nebraska and Minnesota, in each of which the responsibility for the libraries in state hospitals is placed on one person who is expected to carry on a group of libraries as though it consisted of branches of one central system.

The order of procedure is the same in all three states: the supervisor systematizes each library and brings it into line with public libraries, then turns over the daily administration of it to some resident of the institution whom she instructs in the routine to be followed. After leaving the hospital, the supervisor keeps in close touch with the local librarian and returns at intervals to assist in all extra work connected with the growth of the library, aiming in every way possible to take the brunt of the responsibility. This method of operating libraries is not ideal, but it is adequate to keep them open regularly and in good condition, and when it chances that the local librarian is a person of intelligence and enthusiasm the results are even more satisfactory.

The crux of the whole matter rests with the librarian, for, given the books, the system, and the supervisor, unless the one who presides regularly in the library is intelligent, tactful and interested in the patients the whole enterprise is crippled.

Fig. 1. Story hour on the boys' wards, Orthopedic Hospital, Lincoln, Neb.

Fig. 2. Story hour on the girls' wards, Orthopedic Hospital, Lincoln, Neb.

It is seldom that this work is recognized as that of a separate department. Usually it is added to other duties, for which the person is paid and for which he has been trained. The extra labor connected with the library does not appeal to the worker, who considers it just that much more than his share of the day's toil. For these reasons it is sometimes better to select a patient to take charge of the library of a hospital, as there are ordinarily certain of these who have the ability to do this with profit to themselves and satisfaction to the institution.

The state hospital for the insane located at St. Peter, Minnesota, has its library in a large, well-lighted room on the second floor of the administration building, which has an outside entrance and may be reached also by an elevator, so that it is easily accessible from any section of the hospital. The library is carried on by one of the

[1]This is the third paper on institution libraries. "The Hospital Library—Books for the Patients," by Miss E. Kathleen Jones, was published in October; "Medical Libraries in Hospitals," by Mrs. Grace W. Myers, was published in November.

Fig. 3. Library, Orthopedic Hospital, Lincoln, Neb.

patients, who works under the direction of the state supervisor, and it has been the experience in Minnesota that these librarians have been well able to do the work and stand the test of "checking up." The interest taken in the work, however, varies with the individual. Sometimes the patient-librarian is full of enthusiasm and does instinctively the things librarians are trained to do, such as visiting the wards with books chosen for special persons, reading aloud, story-telling, and generally exploiting the library in ways that have greatly increased its usefulness. One such librarian has her own visions as to the possibilities of libraries in hospitals for the insane, and I transcribe herewith her ideas on this subject:

"As May was an unusually busy month, with many outside attractions, I think a record of 526 books read is promising. I strive to have them read, and I am often scolded for carrying books around with me, but in this way I sell my wares and keep my patrons supplied. I am still interested in the work, and each day I come more and more in contact with the readers and realize what a library means to them. It is to many their only soul-salvation, and were I to live long enough I would persevere until I had a building where all readers could go and sit off the wards—a quiet resting-place, where we could read aloud, discuss our books, have lectures and a general uplift movement."

The chief object of a library in a hospital is recreation, but certain ethical considerations govern the selection of books and administration of the library in hospitals for children, the tubercular and the inebriate.

The state hospital for crippled children in Minnesota has a most interesting history, which should be at least referred to whenever the institution is mentioned, for it is a monument to the fervid and determined enthusiasm of one physician and surgeon who combated opposition and unfriendly insinuation before the state legislature so successfully that there is now in the suburbs of St. Paul a hospital for children, especially the crippled and deformed, which is a source of pride and comfort to the state. The surgeons of St. Paul, so the superintendent has told me, place their services at her disposal at any time, day or night, according to the need of the children. A beautiful room is provided in this hospital for what is "really and truly" a children's library, and as the function of the institution is partly educational, one of the teachers is the librarian. The wise suggestions of the superintendent to those offering gifts—all hearts are tender toward these children—have brought about results which are extremely attractive. The standards of the best children's libraries regulate the plans and purposes of the superintendent, who intends to make this one a model.

A well equipped and successful library for children and young people is connected with the Orthopedic Hospital at Lincoln, Nebraska, which is conducted by the state library commission. As this hospital is the permanent home of some of the patients, the library is in charge of one of these residents—a cripple—who has taken a librarian's course of training and carries on the work with much spirit and success.

Fig. 4. Library and reading room, State Sanatorium, Cass County, Minnesota.

Fig. 5. Library, State Hospital for Crippled Children, St. Paul, Minn.

The State Sanatorium of Minnesota has developed the community spirit to a great extent. All sorts of clubs are flourishing there and the library needs to concern itself with something besides mere recreation. Debates, for instance, tax the ordinary library considerably, but a reading room with a good line of magazines accessible to the patients solves this problem to a great degree. This hospital recognizes the library as a distinct department, and employs one of the patients to carry it on. It is open daily and has made good as a desirable feature of the life of the place.

When the state of Iowa opened its hospital for inebriates, a library was from the start considered of prime importance, and was provided for liberally. The same course has been pursued in Minnesota. The value of a library for inebriates is chiefly diversional, but as the inmates have a great curiosity about alcoholism there is an opportunity to put before them books on this subject which will have effect. Books on self-control and the training of the will have seemed to appeal, and there is a certain interest in biography, travel and general literature. It is frequently the case in such hospitals that there are patients who have had good education and training as to literary values. A library carried on by such a person becomes a meeting place for kindred spirits and of guidance for those who wish to read, but are unfamiliar with books.

The value of periodicals in hospitals is unquestioned. While all books have qualities which make them especially adaptable to conditions of institution life, being portable, cheap, comparatively durable and of unchanging value, magazines have these qualities in increased degree. They fill exactly the need of the "back wards" among the insane, bed patients in general hospitals, and in fact the whole population. Therein lies the difficulty in keeping them circulating. Everybody wants to keep them and nobody is willing to pass them along promptly.

Fig. 6. Library, State Hospital for the Insane, St. Peter, Minn.

The most influential lady in the state hospital for the insane at Mount Pleasant, Iowa, has given this matter her personal attention, and devised the following working plan, which is adequate to keep magazines moving through any hospital: At Mt. Pleasant new magazines are sorted so that the men and women will receive the ones most in-

teresting to them respectively, and each number is given a cover of stout Manila paper. If there are two persons working together in the library, with plenty of time at their disposal, it is a good plan to put book-pockets and cards inside the covers, as the cards, being retained in the library, will always show where a given magazine is. But as this system takes more time than the needs of a hospital really demand, a substitute method is to paste on the cover of the magazine a slip of paper with the numbers or names of wards and cottages which are to receive it, and when the magazine is sent out the slip is checked accordingly. By working out a scheme for the movement of the periodicals a certain guidance is given the circulation, which will follow the lines indicated by the slips on the covers. Every Saturday morning the attendants are required to bring to the library all the magazines on the wards. These are put into laundry baskets at one side and new magazines are issued in exchange. After library hours the returned magazines are sorted over; those that are in good condition are put into drawers by themselves to be issued the following week, and the worn numbers are collected for use on the back wards. In this way every ward in the hospital receives a certain quota of fresh periodicals every week—the newest issues, the best of the older ones, and the partly worn are all kept moving. It will occasionally happen that the same magazine will be received more than once, but in the long run all patients who wish to read will have a chance to see the ones they prefer.

Unless literature of this sort is issued from the library according to a definite system of one kind or another, it will not reach the patients. It will accumulate in unknown or unacknowledged places and the result will be entirely unsatisfactory.

It may be said, in conclusion, that the supervision of a group of libraries by one person has been demonstrated satisfactorily in three states, and that while it is not claimed that it is the best method possible, it has certain desirable features peculiar to it. For instance, there is an *esprit de corps* among the librarians, which is a pleasant thing. They and the supervisor form a library staff which serves thousands of readers and circulates an amazing amount of literature annually.

Attention should be called to the Nebraska method of purchasing books and library supplies. By act of legislature a sum of money is set aside for libraries in institutions, to be expended by the state library commission. They are able then to buy whenever it is advantageous to do so, and to buy single books on request.

Why not, then, apply the "budget system" to any group of libraries having one executive officer? Combine the appropriations for books set aside by different institutions into one book or library fund and expend it whenever and wherever good editions are offered at reduced rates. Libraries that can buy in the open market are able to secure finely illustrated books—so desirable for recreation and education in institutions—which would be too costly if bought through ordinary channels.

HOSPITALS OF INDIA

Annual Reports Give Some Interesting Side Lights on Institution Progress in the Great Oriental Empire

India, according to a recent annual report on its progress and conditions, has about 3,868 hospitals. These are dealt with in the report under three groups: 1, "Civil Hospitals and Dispensaries," the 2,820 institutions under this heading having treated 515,162 in-patients and over 30,000,000 out-patients during the year; 2, "State Special and Railway Hospitals," numbering 351, with a showing of 98,171 in-patients and 2,331,969 out-patients; and 3, "Private Non-aided Institutions," with a yearly record of 57,252 in-patients and 4,828,357 out-patients treated in the 697 institutions included in this group.

The Medical College Hospital in Calcutta has added an electrical annex and decided on the construction of a new eye hospital.

The new hospital in connection with King George's Hospital, Lucknow, was opened during the year; and Bombay reports bringing up to date the equipment of her civil hospitals.

Bengal, the Central Provinces, and the Punjab have been trying out the system of exacting fees from well-to-do persons.

Kasauli (Punjab) and Coonoor (Madras) already have Pasteur Institutes and another has been sanctioned at Rangoon.

Insanity is not as prevalent in India as in the European countries, hospitals for the treatment of the insane are apparently few and far between.

Home Treatment for the Insane in New York State

At a recent conference with the New York State Hospital Commission, Governor Whitman directed that the system of treating insane patients in their homes instead of in the fourteen state hospitals be extended. It is believed that this order not only will relieve the congestion in the state institutions, but will tend to cure insanity in its early stages.

Under this system the superintendent of a state hospital for the insane may release a patient upon parole. The patient must report regularly to the established dispensary for examination and treatment by the physician, and the employed social worker must call upon him in his home and see that conditions there are proper for the improvement of his mental condition.

Steps are being taken at Flint, Mich., looking toward the enlargement of the Hurley Hospital of that city, a municipally controlled institution.

INFECTIONS CAUSED BY "SLIPS" IN OPERATING ROOM TECHNIC

It Is Easy to Blame the Catgut, but Operators and Assistants Are More Often Guilty—Some Examples Suggesting Avenues for Improvement

By A LABORATORY TECHNIST

IN a large number of technical investigations of surgical suture problems covering several years, it had been my pleasure and privilege to attend the clinics, in most cases by special invitation, of many of the most prominent surgeons of the United States and Europe. By a close study of *efficiency* in each case, from the viewpoint of an impartially interested student of microbiological problems and by contrasting it with that of operators with less experience, intuition or aseptic training, much information, that I earnestly hope will be of material benefit to surgical science, has been gained.

Some of the errors in technic hereafter mentioned will be so obvious to our most experienced operators that they will be likely to question the authenticity of the records; in other instances the possibility of infection from the sources or in the manner indicated will appear too remote to be seriously considered. I will therefore state at the outset that all the records given are from actual experiences in investigating the problems and no "slips" in technic have been included that cannot be remedied by a *practical* scheme of aseptic control in a modern hospital. Slips of very trivial importance have been omitted in spite of the fact that several consecutive errors of this nature would be in the aggregate of vital importance.

In several instances the errors indicated were checked by bacteriologic control, while in others the direct course of the carrier (or carriers) of infection from a contaminated, unsterilized or improperly "sterilized" object to the suture material as it was buried in the wound was too obvious to the trained observer to need such bacteriologic evidence or proof. To prevent needless repetition, when the same technical slips have occurred under exactly the same circumstances in different operating rooms, they have generally been omitted from my records herein. When they have occurred under differing circumstances they have at times been included.

Operating Room No. 1: This small hospital, obviously run on economical lines in an endeavor to keep within a too narrow income, reported several successive post-operative stitch abscesses in the fascia and skin. These being late infections, the conclusion arrived at by those in charge was that they "must be catgut infections," and therefore the suture material could not have been sterile.

Result of investigation: No utensil sterilizer; therefore no efficient method of sterilizing the basins, etc., between an infected and clean case. Basins were "sterilized" by half filling them with one in twenty carbolic for half hour and then rotating the solution for a few moments in order to "sterilize" the upper half and rim. There was one wash basin in which nurse, surgeon and assistant scrubbed up; there was no gooseneck faucet to the basin; the wash basin was simply a focus for the exchange of infected epithelium.

The liquid soap used was in a tipping container. Operator, assistant, nurse and resident were compelled to touch the same unsterile lever in order to tip the device.

After scrubbing up the hands of each were immersed in a basin containing two or three ounces of alcohol, obviously too small an amount for efficiency when used in this manner; the basins were too small for immersion of the arms.

In the donning of the gloves the fingers of the glove first donned were smoothed down by the fingers of the other ungloved hand and thereby covered with epithelium; this in turn was used to smooth down the second gloved hand. To demonstrate this point I requested the nurse to pick up a sterile needle and insert it into a tube of sterile bouillon. This tube afterward showed staphylococcus albus.

At this hospital all samples of the catgut tested previous to handling proved sterile, but a sample that had been through the gloved hands of the suture nurse, surgeon and assistant and cut off from the strand used in suture of the ovarian stump (in a clean case) proved infected with staphylococcus albus.

Patient's skin had been scrubbed up in the usual manner and swabbed with two percent iodin solution. A culture made by lightly scraping the skin of patient thus prepared, immediately adjacent to the incision and just before closing wound, proved infected with staphylococcus albus. A platinum loop was not used in this test, as it would be too smooth to remove epithelium, but the previously sterilized metal scraper, the scalpel the surgeon used in the operation, was inserted in the culture tube.

In making the subcuticular stitch in closing the wound the strand of chromic catgut was drawn by means of the needle from the skin surface downwards from end to end.

In order to sterilize the outside of the tubes of catgut at this hospital they were immersed in a solution of bichloride. To test the efficiency of this method some of the tubes were transferred from the bichloride to sterile culture tubes by means of sterile forceps (the tubes were not broken); result, a heavy growth of bacillus subtilis from the outside of the glass tubes.

In each case controls were used to test sterility of culture medium; there were no contaminations.

Operating Room No. 2: This hospital reported several successive stitch abscesses, also that the catgut had been bacteriologically tested and spore-bearing organisms that had grown out in three days had been found. Result of investigation three years after infections had occurred: aseptic technic at the hospital thorough; the tubes of catgut had been immersed (by means of the normally greasy and unsterile hands) in one in twenty carbolic solution and had not been boiled. One in twenty carbolic, according to bacteriologic tests and practically all authorities and text-books on the subject, is not a reliable antiseptic for the destruction of spores. In testing the catgut the suture nurse used the same technic as in the previous operations. In grasping the tubes in order to remove them from the carbolic solution with her sterile gloves, she infected the fingers of her gloves from the outside of the tubes (the growth of organisms had only been inhibited). With these contaminated gloved fingers she broke the tubes and inserted the strands of catgut, thereby contaminating the gut into the bacteriologic culture tube. There was no growth for three days, because all but the spore bearers had been destroyed by the antiseptic.

In this case the bacteriologic work had been thorough, but the interpretation of the results had been incorrect, casting an unwarranted stigma on the manufacturers for three years.

Operating Room No. 3: There were numerous infections in this hospital, though the city bacteriologist had repeatedly tested the suture material and invariably found it to be sterile. Both the catgut and the city bacteriologist were therefore under suspicion.

The superintendent had reported that in those cases where "twenty-day" catgut had been employed, "sloughing of the muscle sutures and decomposition of the fat" had occurred within three days.

Result of investigation: Suture nurse, who did not wear gloves, tested each strand for tensile strength before handing it to the surgeon at operation, thereby "squeezing out" and implanting the skin staphylococci on each strand.

Operating Room No. 4: Here was one of the finest operating rooms, with some of the most skillful operators of this country; the team work of surgeon, assistants and thoroughly well-trained operating room nurse required the closest watching of details to detect any error. The first case enters operating theater; celiotomy; free pus in abdominal cavity (not diagnosed); gloved hand of surgeon inserted in abdominal cavity for exploratory purposes, etc., during operation; surgeon and assistant holding retractors; surgeon calls suture nurse to hold retractor while he changes gloves; having changed gloves, surgeon requests suture nurse to hand him a tube of No. 2 medium hard chromic catgut. Nurse lifts the corner of sterile sheet covering suture table and selects the tube from a large number in a basin, handling the tops of several tubes in so doing. This case is sutured and leaves operating theater.

Patient No. 2 enters operating room; a clean hernia case. Tables, dressing towels, instruments, gloves, etc., changed, but suture table with tubes of catgut (which had been boiled before starting operations for the day) were not changed or reboiled. Surgeon asks for a tube of fine chromic catgut; suture nurse lifts same corner of covering sheet and selects one with her gloved hands from the batch of tubes left in the operating room and contaminated from the previous case. The moment she grasps the corner of sheet she has infected her gloves; she has not seen this slip and hands the thereby infected strand to the surgeon with possibilities that may readily be imagined.

Operating Room No. 5: A series of stitch abscesses occurring in the early winter. Catgut tested by pathologist of the hospital and invariably found sterile. Result of investigation: steam from sterilizers and moisture from the humid atmosphere of operating room condensed against the slanting roof of operating room, trickled down to lowest point and dripped at intervals into solution basins, dressings, tables, etc., directly underneath.

Permanent wash basins in operating room (sterilization by usual methods unreliable) in which operators scrubbed up. (Removable basins sterilizable by heat or water running from the faucet should have been employed.)

Gloves "sterilized" by boiling once for three minutes. The fingers of gloves could be seen to float out during ebullition. Bacteriologic tests have demonstrated that gloves must be submerged by some mechanical contrivance, then reversed and resterilized to insure sterility of both sides of gloves. Scalpels "sterilized" by immersion in carbolic solution. (This method is of questionable efficiency, especially in emergency operations or between operations, the element of time being an important factor in chemical sterilization.)

In scrubbing up between operations, etc., the fingers of *each* nurse and operator were dipped into the *same* basin of green soap. Catgut tubes were "sterilized" by soaking in aqueous bichloride.

Sterile towels on instrument tables were contaminated during operation by solution from the basins in which instruments were thrown and surgeon's gloved hands hurriedly rinsed. As soon as such sterile towels become wet they soak up organisms from the glass top table underneath, which previously has been *inefficiently* sterilized by wiping over with a carbolic soaked gauze pad. (Tables should have been covered with a steam sterilized sheeting.)

THE PHYSICIANS' HOSPITAL OF THIEF RIVER FALLS, MINNESOTA

A Twenty-Five-Bed Community Hospital, Financed in a Novel Way—Substantially but Inexpensively Constructed—The Doctors Own and Operate the Institution

By H. W. FROEHLICH, M. D., of the Staff

A REACTION seems to have come about among people in the smaller towns and villages against having their loved ones taken away to the large hospitals in the big cities. Instead, these people are demanding of their doctors and their other fellow citizens that small yet fully equipped hospitals shall be established in their midst, and that the doctors shall be enabled to render their services according to modern methods.

There are several ways in which a hospital may be promoted. Probably the most common way is for some church organization to stand back of the project and do the necessary work in raising the funds, oversee the construction of the building and later manage the institution.

Another way is to organize a hospital association among the active men and women of the community and give to every person who contributes toward the building a certificate of stock, which makes him or her a member of the association; then some of the most influential and active members are chosen to make up the board of directors. Sometimes a private hospital is established by a doctor or a firm of doctors or a nurse. This is not very satisfactory, because a doctor has not the means nor the practice to build or equip a good building; as a rule he rents some old house and equips it as best he can, but things are inconvenient, and the nursing incompetent, and good scientific work cannot be done.

In Thief River Falls, a town of 6,000 people, there was no hospital and the need for one was imperative. One method after another was tried. In the first place, out of a dozen church organizations it was impossible to decide to which one to give united support.

A hospital association was next organized, for the purpose of building a seventy-five bed hospital; but it was impossible to raise that amount of money by public subscription, so this fell through.

Fig. 1. Physicians' Hospital, Thief River Falls, Minnesota.

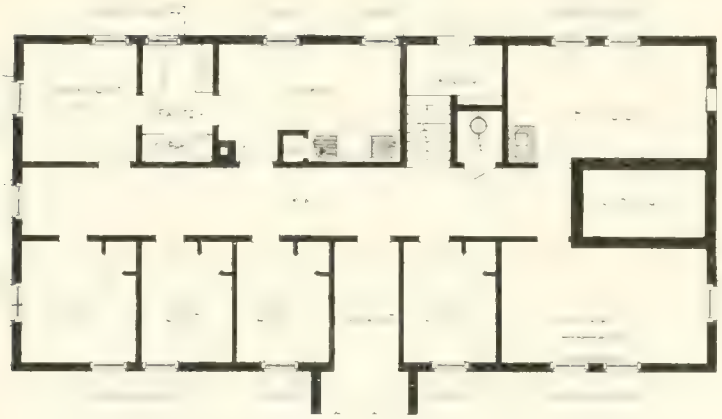

Fig. 2. Physicians' Hospital, Thief River Falls, Minnesota. Basement plan.

The county commissioners were then appealed to for a county hospital, and a resolution was passed favoring the idea; and the matter was then left for the people to vote bonds to the amount of $50,000 for the erection of a county hospital. This issue failed to carry, and we were still without a hospital.

At this point Drs. F. H. Gambell, O. F. Mellby, H. G. Hieber, J. E. Douglass and H. W. Froehlich took things in hand for themselves, and determined to have a hospital. They got together and organized the Physicians' Hospital Company.

This was incorporated as a stock company under the state laws, and its capital was placed at $25,000.00 and divided into 250 shares.

Our purpose was to build one unit of a modern and up-to-date hospital, as our funds were not very large and we felt that if we could only get a start the rest would come more easily. We made a small assessment on each member and purchased a lot, and engaged Mr. Lutz as architect to draw up plans after the various ideas of the founders. On the whole, we believe we have succeeded in putting up one of the neatest and most convenient hospitals ever built for the money.

As, like most small communities, we had to keep down the cost, we decided on a frame building, covered with stucco on metal lath outside, and plaster on metal lath inside; the walls contain two air spaces, which make it a fairly warm building.

As I hope to make this article of some help to other communities similarly situated, I will go somewhat into the details of the construction and management of our hospital.

The building is 62 by 30 feet in area, with a full basement and two stories, and accommodates 25 beds. The exterior of the building is of moss green stucco, and all wood trimmings are painted white, which makes a very pretty effect. The roof is a gravel-pitch one, and guaranteed by the contractor for ten years. The basement walls are of concrete, and extend four feet above the grade line.

In the basement we have the furnace room, general kitchen, pantry, dining room, laundry, vegetable cellar and four sleeping rooms for employees. The floor is of cement, covered with cement paint and linoleum. The woodwork is of yellow pine finished in the natural color.

On the first floor we have the reception room, also used as an office; this opens into a six-foot hall, which runs the entire length of the building. At one end there is a small section taken for a linen closet. Leading from the hall are a bath room, a diet kitchen, one large room for three or four beds, six private rooms, and a superintendent's room. Leading from the first floor to the second is a wide, easy stairway in the center of the building.

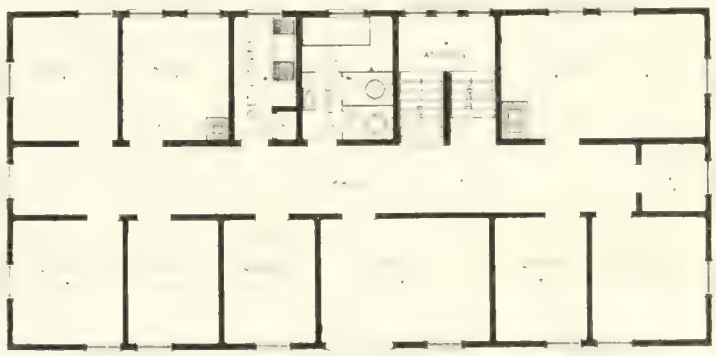

Fig. 3. Physicians' Hospital, Thief River Falls, Minnesota. First floor plan.

The second floor has two large rooms for three or four beds each, five private rooms, diet kitchen and bath room, and operating room; opening from the operating room is a small sterilizing room. At one end of the hall is a doctors' dressing room,

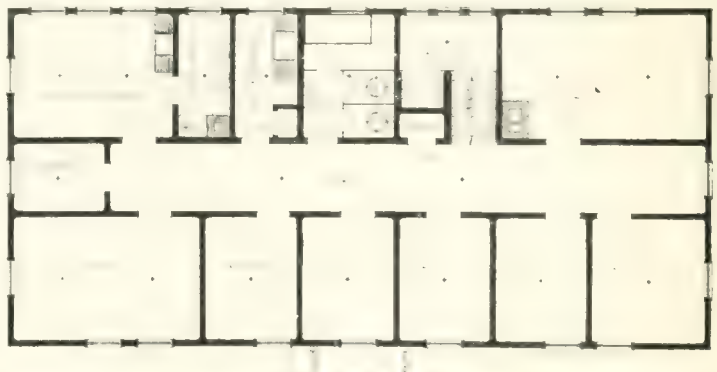

Fig. 4. Physicians' Hospital, Thief River Falls, Minnesota. Second floor plan.

which is also used as a linen room and for operating supplies. There is also a medicine closet on this floor.

Interior finish.—All woodwork is painted with four coats of white enamel on fir lumber, as are also the walls of the operating and sterilizing room. The other walls are sand-float finish and tinted. All corners are rounded to a three-inch radius. For baseboards we have a special design; the lower part of the base is nailed to the rough floor only, while the upper part or molding is nailed to the wall, so that in case the floor settles there never will be the crack between the baseboard and the floor, which is the case where the baseboard is nailed to the wall only. The base is rounded to the floor, which makes it easy to sweep and clean. This is a detail that I feel should be considered by every one who is contemplating building a home or a hospital.

Heating.—We have installed the vapor vacuum heating system, using a Bernhardt smokeless boiler. This seems to be the ideal heat for a hospital, as the temperature can be regulated for each room, and there is never the pounding or escaping steam as with the old systems. It costs a little more to instal than the old gravity hot water or the high pressure steam systems, but pays for itself in the saving of fuel.

Another feature of our hospital is that one of the radiators in the operating room is connected with the hot water heater, so that we do not have to fire up the general heating plant when we want the operating room warm in the spring and fall; in fact, it is warm at all times, as we have a Junior hot water heater going all the time to keep a supply of hot water; and it does not cost us anything extra to heat this radiator.

Ventilation.—Here we have the gravity ventilating system; a sheet iron stack goes up in the wall from each room to the attic; and on the roof is a large globe ventilator through which the foul air leaves the building.

Electric wiring.—The wiring is the common tube system and the electricity is furnished by the city. In each diet kitchen and in the sterilizing room are located plugs where heating appliances can be attached. As most light companies give a lower rate for current used for power purposes, we have this on a separate meter.

Call system.—Each room is connected with a buzzer and annunciator located in the hall, one for each floor. For the small hospital we feel this is the only satisfactory method, though in a large hospital, where there is a nurse on duty in the hall all the time, the light system would be better.

Plumbing.—We have a good grade of fixtures, although we have nothing elaborate: in the operating room we have a foot control wash-up sink, using running water and no basins.

Floors.—The floors are of maple, oiled, given one coat of varnish and then waxed; this keeps down the dust. The operating and bath room floors are composed of the new asbestos composition, which seems so far to be satisfactory.

A dumb elevator connects the main kitchen and the diet kitchen, which, as will be seen, are located one above the other and next to the bath rooms. In this way there is a saving in the installation of the plumbing system, which amounts to considerable.

Cost of the building.—The entire building was built by local contractors, each of whom did his work satisfactorily, even though we did away with the expense of a superintendent.

The general contract price was $7,900.00.
Heating, $1,800.00.
Plumbing, $1,079.00.
Electric wiring, $130.00.
Call system, $42.00.
Extras, about $50.00.

This makes the cost of the building about $11,000.00, exclusive of fixtures; the outlay for fixtures was about $2,000.00. The private rooms were entirely furnished by local people and organizations; even the high school class furnished the equipment for the operating room as a memorial to the class. We bought all the beds, so as to have them uniform, and the cost was divided among the donors, but each donor selected a dresser, a small rocker, a bedroom chair, and rug and curtains.

We had more offers to furnish rooms than we had rooms, and I am sure that this same spirit will be shown in every community, and that as soon as the building is assured the furnishings will be gladly donated.

Financial arrangement.—In our case all the doctors put in equal amounts of money as working capital, then the county commissioners gave us an appropriation of $4,000.00. This they are permitted to do under a state law, where there is no county hospital, the only conditions being that the hospital will give preference to county charges and that it will be maintained for a period of ten years. For the balance of the money we secured a loan from a loan company, which we are paying off at the rate of $15.00 a thousand per month for one hundred months.

To provide for this fund each doctor is charged a fixed sum for each day he has a patient in the hospital. For example, Dr. A. has a patient in the hospital for ten days in the month, and Dr. B. has five patients, each one of whom remains in the hospital for ten days; Dr. B. will be charged for

50 days. If the rate, for example, is 50 cents a day, then Dr. A. will pay $5.00 into the fund to pay off the loan, while Dr. B. will have to pay $25.00. It is only fair that the man with the largest practice, who gets the most out of the hospital, should have to pay the most into the hospital. When the loan is paid the payments will stop, and all will have an equal share. We expect the hospital to pay running expenses; or rather, by careful management we hope it will do even better.

Management.—In a way our position is unique in that the doctors own and manage the hospital, yet each one of the five doctors has his private practice. It is a source of pride and satisfaction that in this city the doctors are more than on speaking terms, as is not the case in so many places, to the shame and discredit of doctors in such communities.

In uniting our efforts as we have, in a common cause, and meeting together as we have to do to carry on the business, we have come to know each other better and to find that the other man is not such a bad fellow after all.

The management is delegated to a committee of three, who have general charge of affairs, while one of the doctors acts as bookkeeper. Miss Ruth Aus, R. N., is the superintendent and has immediate charge of the hospital, while Mrs. B. Grout is the matron and has charge of the culinary department. The matter of having competent people at the head of the hospital is what makes or breaks the institution; it is the little leaks here and there that run up expenses.

We have already started a training school, where we expect to give the girls the first two years of a three years' course; the last year will be spent in the large hospital with which we expect to affiliate.

The hospital was opened September 1 by a public reception to the people of the town, which was attended by about 2,000 persons. The doctors' wives, assisted by members of the Woman's Club, served coffee and wafers. The visitors were loud in their praises of the hospital and the doctors who made the hospital possible. Two men were so well pleased that they gave us their checks for $25.00 to show their appreciation.

[Editorial Analysis—It seems that Dr. Froehlich and his associates have done extremely well with their space; in fact, they have chosen the wise course by allowing an abundance of administrative space and a smaller share of space for the actual accommodation of patients. The three stories comprise a total of 5,400 square feet of floor space; and of this 2,904 feet have been given over to administration; this includes halls, stair landings, kitchen, laundry and closets—in fact, all the space not actually occupied by patients' rooms. This leaves 2,496 feet for patients, or considerably less than one-half of the total. We are accustomed to regard one-half space for administration and the other half for patients as quite fair proportions even in a large hospital, and we usually look for a much larger proportion of patients' space and a smaller administration proportion in small hospitals, since in the small hospitals there is usually a pressure to accommodate the largest number of patients. Dr. Froehlich's hospital force will be able to give the patients a much better service because of this larger amount of administration space. It was wise also to divide the three and four-bed wards between the two floors; in this way the ward patients will come nearer to getting the same attention that private room patients will get than if the wards were concentrated in one part of the house. There are only two or three criticisms to offer about this nice little hospital: in the plans it was beautifully contrived to have a long hall sweeping the whole width of the house on all three floors, so that thorough cross-ventilation could be had; it was too bad that it then became necessary to cut off the free air space by stopping up one end of the hall in the basement for a cistern well, and a small amount of space at one end on the first floor for a closet, and also one end of the second floor hall for a dressing room. In half apology for these tactical errors in construction, Dr. Froehlich explains that the closet on the first floor and the dressing room on the second floor have deep transoms, and it is intended to maintain a continuous circulation through them. The most serious error in construction, it seems to us, is in the location of the toilets, and in their insufficient number. It is assumed that there will be about twelve patients on the first floor and about the same number on the second floor; one toilet room with two seats seems not to be sufficient for twelve people, and it is almost certain that there will sometimes be both sexes on one or both of these floors, and it is impossible for men and women to use a single toilet unit where they are arranged as these are. The administrators of the hospital will regret this deficiency. It seems, moreover, that the only toilet designed for the use of the employees is the single one located in the basement, which apparently must be used for men and women. There seems not to have been a toilet for the nurses, which means a good deal of unnecessary climbing of stairs, or the common use of toilets by patients and nurses, which is not a nice thing. There should have been at least one toilet, preferably on the first floor, for the nurses, and it seems there should have been an additional toilet on the basement floor for one of the sexes, the one indicated on the plan being for the other; in other words, there should have been two toilets for employees, one for men and one for women, and a central toilet somewhere for the nurses. It seems to us, however, that the greatest tactical error of construction was in the placing of the toilets away from the window where they cannot have direct ventilation. It would seem to have been far better if the bath tubs on the first and second floors had been over next to the corridor, and the toilet seats next to the window, one on either side, so that both would have had direct window ventilation. These toilets are bound to give rise to odors, and it seems almost conclusive that the toilet located in the basement must be extremely objectionable for the same reason. However, Dr. Froehlich and his associates have built a mighty nice little hospital, which will be a great comfort to them in their attempts to do good, clean medical and surgical work.—J. A. H.]

Mr. J. W. Draper Killed

Mr. J. W. Draper, for the past seven and a half years superintendent of the University Hospital at Ann Arbor, Mich., was run over by a street car on the streets of his home city on Saturday evening, November 13, and died a few minutes afterward.

Mr. Draper was one of the best known hospital administrators in the country and was recognized as a thoroughgoing, highly trained and efficient hospital man. Before he became superintendent of the Ann Arbor Hospital he had been accountant and chief financial officer of the Eastern Michigan State Hospital at Pontiac for nearly twenty years, at the end of which long service he was called upon to accept appointment as successor to Mr. E. S. Gilmore, who had been elected superintendent of Wesley Hospital, Chicago.

Mr. Draper leaves a widow and a grown daughter, who has recently finished the university course at Ann Arbor. He was about fifty years of age.

CHOCOLATE AND COCOA—THEIR COMPOSITION AND FOOD VALUE[1]

Highly Nutritious Items of the Dietary as Compared With Tea and Coffee—Adulterants not Commonly Used, but Some Manufacturers Make Misleading and Unnecessary Claims

By JOHN PHILLIPS STREET, Chemist Connecticut Agricultural Experiment Station, New Haven, Conn.

COCOA and chocolate are made from the beans of the small tree, *Theobroma cacao*. In brief, the method of manufacture is as follows: After sweating and the removal of such impurities as stones, parts of the shell, etc., the beans are roasted, thus developing the flavor and making easier the subsequent removal of the shells and the grinding. The beans are then crushed by machinery, the shells being thus removed. The broken beans, known as "cocoa nibs," are then ground, the heat developed by the grinding melting the fat, and the paste thus obtained is run into moulds, where it is cooled, and makes what is known in the trade as unsweetened, plain or premium chocolate. Sweet chocolate is prepared by mixing pulverized sugar and vanilla, or other flavoring material, with the chocolate paste. In milk chocolate a certain amount of milk is introduced, either as milk itself, or condensed milk, or a milk powder, from which more or less of the milk fat may have been removed.

Cocoa is prepared from chocolate by removing by pressure a portion of the fat and reducing the residue to a fine powder, with or without the addition of flavor. While chocolate contains about fifty per cent of fat, cocoa, as a rule, contains only about one-half of that amount.

There has been some question raised as to the proper nomenclature of chocolate and cocoa. While it is true that the original product containing all the cocoa fat, strictly speaking, should be called "cocoa," or more properly "cacao," the name under which it is known in the countries where it is produced, long commercial practice has established otherwise, and manufacturers, dealers and consumers for almost a century have understood "chocolate" to be the product containing all the original cocoa fat, and "cocoa" to be the product from which a portion of the fat has been removed. To change the significance of these two names at the present time would serve no useful purpose and would cause needless confusion.

With these facts in mind the Federal Joint Committee on Food Definitions and Standards has recently announced the following standards, somewhat abridged, for chocolate and cocoa products:

Chocolate, plain chocolate, bitter chocolate, is the solid or plastic mass obtained by grinding cacao nibs without the removal of fat or other constituents except the cacao germ. It contains not more than 3 percent of ash insoluble in water, 3.50 percent of crude fiber and 9 percent of cacao starch, and not less than 45 percent of cacao fat.

Sweet chocolate is chocolate mixed with sugar (sucrose), with or without the addition of cocoa butter, spices or other flavoring materials. It contains in the sugar- and fat-free residue no higher percentages of ash, fiber or starch than is found in the sugar- and fat-free residue of chocolate.

Cocoa, powdered cocoa, is cacao nibs, with or without the germ, deprived of a portion of its fat, and finely pulverized. It contains percentages of ash, crude fiber and starch corresponding to those in chocolate after correction for fat removed.

Sweet cocoa is cocoa mixed with not more than 60 percent of sugar (sucrose). It contains in the sugar- and fat-free residue no higher percentages of ash, crude fiber or starch than are found in the sugar- and fat-free residue of chocolate.

Milk chocolate, milk cocoa, sweet milk chocolate, or *sweet milk cocoa,* is chocolate, cocoa, sweet chocolate, or sweet cocoa, which contains not less than 12 percent of whole milk solids in the finished product.

The above data will prove a useful guide to the dietitian as to the standard quality of the various chocolate and cocoa preparations on the market.

The most complete analyses of authentic chocolate and cocoa are those of Winton (Conn. Expt. Stat. Report, 1902, 282). The following are Winton's average figures in the original material:

	Cocoa nibs	Chocolate	Cocoa
Ash	3.32	3.15	5.49
Insoluble ash	1.16	1.41	2.82
Sand	0.02	0.06	0.24
Nitrogen	2.38	2.26	3.33
Theobromin	1.04	0.78	1.15
Caffein	0.40	0.13	0.16
Fat	50.12	52.19	26.69
Fiber	2.64	2.86	4.48
Starch	8.07	8.11	11.14

Unlike tea and coffee, those other popular household beverages, whose chief value (?) lies in their stimulating qualities, cocoa and chocolate have considerable food value. About one-half of choc-

[1] One of a series of articles on The Commoner Classes of Foods. One of these articles appears practically every month.

olate and one-fourth of cocoa is fat, while the percentages of nitrogenous matters and starch are by no means small. It must be noted, however, that a considerable proportion of the nitrogen is of the amide form, while notable amounts of nitrogen in the form of theobromin and caffein are also present. The fat also is by no means as digestible as the manufacturers would have us believe; in fact, it is quite indigestible.

Theobromin is the chief alkaloid found in chocolate and cocoa, the cocoa nibs containing on the average about one percent; caffein, which chemically is closely allied to theobromin, is also present to the extent of about 0.4 of one percent.

ADULTERATIONS OF CHOCOLATE AND COCOA

The removal of a portion of the cocoa butter to make the product known as "cocoa," of course, is not an adulteration. The chief adulterations observed in these products have been incomplete removal of the shells and the addition of shells, starch, flour or sugar. In former times Venetian red, coal-tar dyes and other artificial colors were sometimes found. These are no longer met with in commercial chocolate and cocoa, although not infrequently iron oxide or some other iron compound is used to intensify the color in the coatings of cheap confectionery and in soda water syrups.

Many analyses of commercial chocolate and cocoa have been made in the writer's laboratory. Some of these, however, are merely of local interest, and the subjoined tables include only those brands which have a wide use in this country, and which have been analyzed since 1911. The tables include the analyses of 7 plain chocolates, 12 sweet chocolates, 11 milk chocolates, 31 cocoas, 9 compound cocoas, and 19 "diabetic" chocolates and cocoas.

TABLE I

The plain chocolates show only trifling variations in composition; they contain on the average about 50 percent of fat.

TABLE II

In the sweet chocolates the variations are greater, depending chiefly upon the amount of cane sugar used. Barring *Baker's Hasty Lunch Chocolate*, which is a cocoa rather than a chocolate, the fat ranges from 20.14 to 41.19 percent, the cane sugar ranging inversely from 63.05 to 34.55 percent. The analyses do not indicate the removal of any fat, except in the Baker brand, although in certain cases it would appear that cocoa fat had been added to make possible the incorporation of more sugar with the chocolate.

In the milk chocolates the analyses are still more variable, due to the different amounts of sugar used and to the nature of the milk product employed. The percentage of fat ranges from 14.55 to 33.31, the cane sugar from 39.45 to 56.48, and the milk sugar from 2.25 to 8.46. Strictly speaking, a "milk" powder without other qualification should indicate one made from whole milk. As a matter of fact, however, certain manufacturers use a skim milk product, virtually dried casein and milk sugar, while others use powders from which more or less of the milk fat has been extracted. The Reichert-Meissl number of the fat of sweet chocolate indicates with some degree of accuracy the amount of milk fat present. This value in cocoa fat is very low, from 0.2 to 0.4, and in this connection may be disregarded; the Reichert-Meissl number of milk fat, however, averages about 24. The following Reichert-Meissl numbers were obtained by the writer in the sweet chocolates listed in the table:

Achor 7.0	Huyler 3.2	Stollwerck... 3.7
Cailler 6.2	Nestlé 5.6	Suchard 5.1
Hershey 5.9	Peter 4.1	Wilbur 5.8
Hooton 5.0	Pulver 3.7	

These figures would indicate that from 13 to 29 percent of the fat in the sweet chocolates was derived from milk.

TABLE III

The cocoas show wide differences in composi-

TABLE I—ANALYSES OF CHOCOLATE

Brand	Ash			Alkalinity of ash		Fat	Soluble in water				Organic matter soluble in cold water	Relative sedimentation
	Total	Soluble in water	Insoluble in acid (sand)	Per gram of chocolate	Per gram of ash		Nitrogen	Cold	At 65° C.	At 100° C.		
Plain Chocolate												
W. H. Baker's Premium Chocolate No. 1	2.91	1.11	0.03	3.29	113	51.20	2.09	12.68	14.70	16.18	11.57	48
Brewster's Premium Plain Chocolate	3.76	1.66	0.10	4.19	111	47.90	2.29	14.00	15.68	17.56	12.34	48
Huyler's Baking and Cooking Chocolate	3.39	1.41	0.18	4.10	120	49.74	2.45	13.12	14.20	15.92	11.71	50
Lowney's Premium Chocolate	3.21	1.24	0.21	3.63	113	51.04	2.31	11.02	12.74	14.80	9.78	46
Maillard's Premium Chocolate	2.94	1.18	0.05	3.58	122	52.35	2.24	11.04	13.26	14.38	9.86	45
Mohican Plain Premium Chocolate	3.69	1.61	0.08	4.42	120	49.13	2.34	12.90	13.98	16.70	11.29	58
Runkel's Plain Premium Baking Chocolate	3.26	1.34	0.07	3.78	116	50.46	2.29	11.94	13.46	15.70	10.60	51

tion, depending on the extent to which the cocoa fat is removed and on the process by which the cocoa is treated. The fat ranges from 19.50 to 31.37 percent, the ash from 4.58 to 9.03, and the alkalinity of the ash from 4.90 to 10.92. The amount of fat desirable in a cocoa is largely a matter of taste, and if within reasonable limits offers no cause for serious criticism. The quality most sought after in cocoa by dietitians is a less "hearty" drink than chocolate, a product with a lower fat content probably being more acceptable to a delicate stomach or one weakened by disease. It is evident, therefore, from a dietetic standpoint that too much fat in a cocoa may be quite as objectionable as too great a deficiency.

The point of chief interest, however, revealed by these analyses, is the variation in the ash and value, and consequently superior quality. As a result we find that certain manufacturers of cocoa made by the Dutch process take advantage of this popular error and in their advertisements assert that this darker color indicates greater strength and value than is possessed by cocoas of a lighter color, an assertion which, of course, is untrue. Naturally the alkaline carbonate possesses no food value and its use may seriously affect the aroma, flavor and palatability of the drink made from the cocoa in question. Another effect of the alkali is to produce a powder which may remain in suspension in water or milk for a longer time than untreated cocoa. This property has given rise to the fallacious term "soluble cocoa." There is, of course, no such thing as a soluble cocoa. In fifty-two analyses of cocoa made by the

TABLE II—ANALYSES OF SWEET AND MILK CHOCOLATE

Brand	Ash			Alkalinity of ash		Fat	Nitrogen	Cane sugar	Milk sugar	Soluble in water			Organic matter, not sugar, soluble in cold water	Relative sedimentation
	Total	Soluble in water	Insoluble in acid (sand)	Per gram of chocolate	Per gram of ash					Cold	At 65° C.	At 100° C.		
Sweet Chocolate														
Austin, Nichols & Co.'s Anco Sweet Chocolate	1.22	0.60	0.03	1.53	125	24.37	0.88	58.31	0	63.38	63.34	64.52	4.47	70
Baker's Sweet Chocolate Cinquième	1.34	0.69	0.02	1.55	116	27.90	0.90	55.09	0	59.42	60.20	61.26	3.64	47
Baker's German's Sweet Chocolate	1.12	0.60	0.04	1.32	118	28.05	0.81	55.67	0	60.16	60.38	61.34	3.89	45
Baker's Dot Sweet Chocolate	1.68	0.78	0.04	2.06	123	41.19	1.21	34.55	0	41.12	41.96	42.90	5.79	41
Huyler's Vanilla Sweet Chocolate	1.13	0.56	0.05	1.38	122	23.35	0.73	63.05	0	67.50	66.78	67.82	3.89	51
Knickerbocker Barker's Hasty Lunch Chocolate	2.18	0.88	0.03	2.22	102	11.22	1.61	55.53	0	64.58	65.56	66.98	8.17	79
Lowney's Vanilla Sweet Chocolate	0.99	0.71	0.05	1.15	116	26.60	0.67	59.28	0	63.84	64.26	65.66	3.85	47
Meiner's Chocolat Saute Vanilla	1.58	0.79	0.05	1.75	111	21.90	0.98	59.39	0	65.05	64.86	65.52	4.96	91
Mohican Sweet Chocolate	0.94	0.61	0.04	1.11	118	27.50	0.63	57.88	0	64.08	64.16	65.56	5.59	47
Runkel's Vienna Sweet Chocolate	1.06	0.61	0.02	1.29	122	20.14	0.74	62.86	0	69.40	69.44	70.68	5.93	67
Whitman's Instantaneous Chocolate	1.61	0.77	0.05	1.84	114	24.60	1.11	54.21	0	59.94	60.06	61.54	4.96	85
Whitman's Super Extra XXX Vanilla Chocolate	1.26	0.92	0.05	1.51	120	31.78	0.63	53.01	0	59.06	59.46	60.02	5.13	38
Milk Chocolate														
Achor's Choco-Lactine	2.22	..	....	2.40	108	14.55	1.50	56.48	7.20	.....	.....	68.16	....	..
Cailler's Genuine Swiss Milk Chocolate	1.56	0.54	0.02	1.19	76	29.95	1.17	48.31	7.28	61.64	61.46	62.34	5.51	47
Hershey's Milk Chocolate	1.85	0.63	0.02	1.82	98	28.69	1.36	45.81	7.75	60.38	60.66	61.66	6.19	24
Hooton's Jersey Milk Chocolate	1.71	0.66	0.03	2.09	122	32.13	1.19	43.09	3.57	54.04	54.28	55.02	6.72	41
Huyler's New Process Milk Chocolate	1.67	0.85	0.01	1.93	116	28.77	1.11	49.45	2.25	59.26	58.94	59.58	6.71	62
Nestle's Swiss Milk Chocolate	1.56	0.61	0.01	1.58	101	28.85	1.17	49.65	6.87	65.78	64.43	63.52	8.65	28
Peter's Milk Chocolate	1.79	0.82	0.02	2.10	117	33.23	1.42	39.45	6.24	52.52	53.66	53.62	6.01	39
Pulver Milk Chocolate	2.12	0.83	0.04	2.49	117	26.84	1.44	44.26	8.46	62.09	61.24	61.44	8.54	44
Stollwerck Gold Brand Milk Chocolate	1.66	0.67	0.04	1.89	114	33.31	1.20	42.45	7.39	56.24	56.24	56.64	5.73	36
Suchard Milka Chocolate au Lait Concentré	1.60	0.53	0.04	1.92	120	32.67	1.29	42.64	7.81	57.98	58.14	58.46	7.00	38
Wilbur's American Milk Chocolate	2.25	0.92	....	1.75	78	30.63	1.55	39.49	8.17	57.12	57.04	56.34	8.54	32

in its alkalinity. A number of the cocoas listed in the table are the so-called "soluble" cocoas made by the Dutch process. This process consists in treating the cocoa at some stage of its manufacture with an alkaline carbonate, generally potassium carbonate, although sodium, ammonium and magnesium carbonates are sometimes used. The amount of carbonate added varies from 1.5 to 5 percent, but is generally about 2 percent. The effect of this treatment with alkali is to change the color of the cocoa from a brown to a dark reddish color, the cocoa thus obtained making a much darker mixture with water than the untreated cocoa. There exists an incorrect popular belief that this darkness of color shows concentration of flavor and food

writer the average solubility in cold water was 19.40 percent and in boiling water 23.55 percent. It was also found that while in the treated cocoas 1.7 percent more of the total cocoa was soluble in boiling water than in the case of the untreated cocoas, over 3 percent less of the organic matter was soluble in cold water. In other words, the apparent slightly increased solubility was due to the added alkali and not to any change in the cocoa mass itself. On the average the "soluble" cocoas showed a lower water-solubility of the cocoa mass than those brands making no claim of superior solubility. The power of suspension of these "soluble" cocoas also is greatly exaggerated. By applying Howard's arbitrary, but strictly comparative, sedimentation test, in these same cocoas

TABLE III—ANALYSES OF COCOA

Brand	Ash: Total	Ash: Soluble in water	Ash: Insoluble in acid (sand)	Alkalinity of ash: Per gram of cocoa	Alkalinity of ash: Per gram of ash	Fat	Nitrogen	Soluble in water: Cold	Soluble in water: At 65° C.	Soluble in water: At 100° C.	Organic matter, soluble in cold water	Relative sedimentation
Austin, Nichols & Co.'s Carmelo Breakfast Pure Cocoa	5.01	2.04	0.24	5.61	112	26.45	3.40	17.88	19.92	21.78	15.84	101
Austin, Nichols & Co.'s Sunbeam Pure Food Breakfast Cocoa	5.49	2.05	0.01	5.98	109	20.20	3.93	19.88	21.94	24.66	17.83	101
Walter Baker's Breakfast Cocoa	5.25	2.00	0.13	5.85	111	27.92	3.53	17.36	19.88	21.36	15.36	104
Walter Baker's Webb's Pure Cocoa Powder	4.82	2.01	0.12	5.90	122	26.20	3.55	19.14	20.66	25.10	17.13	103
Wm. H. Baker's Justice Brand Cocoa	5.24	1.96	0.27	5.91	113	26.02	3.41	18.86	20.40	22.72	16.90	102
W. H. Baker's Best Cocoa	4.59	1.72	0.17	5.47	119	29.67	3.19	18.02	20.28	21.86	16.30	90
Beckmann's Best Breakfast Cocoa	5.54	2.46	0.29	6.35	115	24.50	3.43	19.66	21.68	23.76	17.20	90
Bensdorf's Royal Dutch Cocoa	6.65	5.24	0.00	8.49	128	31.35	3.45	18.28	20.24	24.66	13.04	82
Brewster's L. B. C. Cocoa	5.25	3.11	0.14	6.20	118	24.45	3.48	20.58	22.54	24.38	17.47	91
Brewster's Royal Breakfast Cocoa	4.58	2.61	0.03	4.90	107	28.95	3.21	19.02	21.70	23.38	16.41	85
Brewster's Savoy Breakfast Pure Cocoa	5.29	2.08	0.19	6.10	115	23.22	3.45	19.32	22.28	23.74	17.24	98
Clark, Chapin & Bushnell's Swan Brand Breakfast Cocoa	4.82	1.77	0.17	5.75	119	26.67	3.45	18.96	21.26	22.74	17.19	93
Depew's Welcome Dainty Brand Cocoa	5.49	2.88	0.09	6.57	120	24.85	3.65	19.36	21.54	23.04	16.48	102
Hooton's Amazon Breakfast Cocoa	5.23	2.23	0.10	6.10	117	24.60	3.66	19.26	21.28	22.86	17.03	102
Huyler's Cocoa	4.99	2.10	0.18	5.84	117	27.21	3.39	18.02	19.64	21.50	15.92	94
Ideal Old Dutch Pure Soluble Breakfast Cocoa	9.03	7.18	0.02	10.92	121	21.65	3.45	21.36	22.95	26.58	14.18	90
Leggett's Nabob Breakfast Cocoa	6.21	4.60	0.06	7.29	117	19.56	4.07	20.28	22.60	26.24	15.68	96
Lowney's Breakfast Cocoa	5.49	3.02	0.20	6.18	113	21.41	3.79	19.38	21.32	22.64	16.36	101
Maillard's Breakfast Cocoa	5.04	1.97	0.06	6.07	120	25.65	3.64	18.86	20.56	22.08	16.89	100
Melbourne Australian Brand Breakfast Cocoa	5.69	2.10	0.32	6.10	107	24.46	3.47	20.12	22.34	24.00	18.02	100
Mohican Brand Cocoa	5.53	2.47	0.15	6.14	111	23.12	3.43	22.64	24.85	26.66	20.17	99
Powell's Breakfast Cocoa	5.09	2.17	0.07	6.30	122	22.00	3.68	18.78	21.32	22.86	16.61	102
Pulver's Breakfast Cocoa	5.95	2.86	0.37	7.04	118	20.90	3.58	20.12	22.22	24.62	17.26	101
Rockwood's Semper Idem Breakfast Cocoa	4.93	2.08	0.17	6.04	122	26.27	3.46	19.76	22.20	24.36	17.68	95
Runkel's Pure Breakfast Cocoa	5.48	2.30	0.15	6.46	120	25.89	3.62	18.64	20.68	22.06	16.34	100
Sreman's White Rose Brand Cocoa	5.97	2.22	0.34	5.83	98	23.76	3.61	18.34	20.30	22.20	16.12	105
Stollwerck's Cocoa	5.96	3.65	0.08	7.40	124	26.07	3.62	18.64	20.32	23.72	14.99	90
Suchard's Soluble Cocoa	6.44	4.53	0.01	8.12	126	31.28	3.23	17.46	18.74	23.10	12.93	82
Van Dyk's Ambassador Brand Breakfast Cocoa	1.86	1.80	0.05	5.45	112	25.40	3.53	20.20	22.76	23.62	18.40	90
Van Houten's Pure Soluble Cocoa	8.07	6.55	0.01	10.55	131	28.49	3.38	19.12	20.46	22.30	12.57	74
Zuyler's Breakfast Cocoa	7.09	....	....	6.70	94	22.20	3.44	....	....	22.20	....	...

it was found that the average sedimentation number for the untreated cocoas was 96, while that for the treated was 87, only a little less.

TABLE IV

In the compound cocoas we find most variable analytical data. The fat ranges from 7.60 to 30.85, the ash from 1.80 to 5.44, and the cane sugar from 15.25 to 63.25 percent. It would seem, generally speaking, that it would be better economy for the consumer to make his own addition of sugar to ordinary cocoa, rather than to pay the manufacturer a cocoa price for sugar.

Health Koko, made by the Kellogg Food Co., claims that the theobromin has been removed. The sample analyzed contained but 0.14 percent of theobromin and caffein, about one-tenth the amount found in ordinary cocoa. It is difficult to say whether the theobromin has actually been removed in large part, or whether the apparent reduction is due, at least in part, to the "nuts, maltose and sugar," which, according to the label, are ingredients of the compound.

TABLE IV—ANALYSES OF COMPOUND COCOA

Brand	Ash: Total	Ash: Soluble in water	Ash: Insoluble in acid (sand)	Alkalinity of ash: Per gram of cocoa	Alkalinity of ash: Per gram of ash	Fat	Nitrogen	Cane sugar	Soluble in water: Milk sugar	Soluble in water: Cold	Soluble in water: At 65° C.	Soluble in water: At 100° C.	Organic matter, not sugar, soluble in cold water	Relative sedimentation
Bartlett's Admiral Sweet Cocoa	2.94	2.18	0.02	3.77	128	7.73	1.42	61.80	0	70.28	70.78	72.08	6.30	110
Bartlett's Ralston Health Club Cocoa	3.11	2.27	0.01	3.98	128	12.60	1.60	55.60	0	65.26	65.76	67.54	7.92	100
Croft's Swiss Milk Cocoa	4.71	1.84	0.26	5.44	115	22.06	2.86	15.25	1.25	31.30	32.48	34.28	12.96	103
Kellogg's Health Koko	1.80	....	....	2.30	128	17.55	†2.70	26.77	....	....	....	31.50	....	...
Melbourne Empire Brand Compound Lunch Cocoa	2.62	1.88	0.03	3.35	128	7.60	1.30	63.25	0	72.24	73.40	75.24	7.11	109
New Jersey Choc. Works' Best Lunch Cocoa	2.06	1.14	0.08	2.60	126	12.33	1.45	51.95	0	64.64	65.80	67.06	8.55	100
Phillips' Digestible Cocoa	3.68	2.38	0.01	3.82	104	30.85	2.45	21.98	0	32.84	33.88	35.46	8.48	115
Stollwerck's Milk Cocoa	5.44	2.01	0.05	6.30	116	20.92	3.89	*	*	31.02	32.64	32.88	....	85
Theinhardt's Hygiama	3.54	....	....	....	....	10.03	‡3.24	¶17.07	....	....	....	....	....	...

*Polarized @ 21° C. = 6.9 direct and - 6.16 after inversion.
†0.13% theobromin and caffein.
‡0.05% theobromin and caffein.
¶Total soluble carbohydrates.

Hygiama makes no claim as to theobromin, but analysis shows that it contains only 0.05 percent of the combined alkaloids. This compound is essentially a partially defatted cocoa containing about 47 percent of sugars.

TABLE V

Certain brands of chocolate and cocoa are specially recommended for the use of the diabetic,

thereby implying at least a considerable reduction in carbohydrates (starches and sugar). In certain brands a considerable reduction is effected by the use of casein or other protein preparations. In many instances, however, the reduction of carbohydrates, if any, is slight, and the diabetic pays a greatly advanced price for articles scarcely better suited to his needs than ordinary chocolate and cocoa. In some brands of cocoa there is an actual addition of cereal starch, which apparently in no way interferes with the manufacturers specially recommending them for diabetics. In comparing the analyses of these products with those of the ordinary brands the reader should remember that on the average plain chocolate

"Triple the strength of cocoa as usually prepared. Preserving in their entirety—the nutritive properties of the natural bean." Both statements are obviously untrue.

"Acknowledged by the leading authorities to be absolutely the purest cocoa made." This is untrue, as it contains a large excess of added alkali.

"Soluble and digestible." Both statements are incorrect.

"Cocoa is stronger and more economical than chocolate," the reverse of which is, of course, true.

"Double the strength of ordinary grades of cocoa." Obviously untrue.

"Soluble," "most of the cocoa butter has been eliminated," "free from alkali." This cocoa is

TABLE V—ANALYSES OF "DIABETIC" CHOCOLATE AND COCOA

Brand	Water	Ash	Protein (N × 6.25)	Fiber	Nitrogen-free extract	Ether extract (fat)	Starch	Reducing sugars as invert	Polarization at 20° C. Direct	Polarization at 20° C. After inversion
Chocolate										
Brusson Chocolat with added Gluten à la Vanille	2.6	3.2	15.9	2.2	26.4	49.7	9.2	* 1.5	+ 2.6	+ 0.0
Fromm's Conglutin-Diabetiker Schokolade	1.0	5.4	17.6	1.2	32.7	39.1	4.3	*15.2	+ 4.3	5.2
Goldscheider's Dessert-Schokolade für Diabetiker	2.2	1.8	11.4	1.7	25.3	57.6	5.0	11.0	..	.....
Goldscheider's Mocca-Schokolade für Diabetiker	2.2	2.3	10.2	1.7	23.4	60.2	4.1	10.0	.....	.....
Goldscheider's Nuss-Schokolade für Diabetiker	.1	2.7	14.6	1.7	23.2	54.4	6.9	7.3	.....	.....
Goldscheider's Orange-Schokolade für Diabetiker	2.4	2.2	11.4	1.4	25.0	.6	5.0	11.2	..	.....
Groetzsch's Essschokolade	1.6	2.7	10.8	4.4	17.2	60.1	12.0	....	....	.....
Groetzsch's Kochschokolade	0.9	6.7	25.3	5.9	26.1	25.1	15.9	....	....	.....
Plasmon Chocolate	3.5	2.5	20.2	0.7	48.0	25.1	2.4	†41.0	41.6	—13.3
Rademann's Diabetiker-Chokolade	2.5	3.2	17.5	2.3	16.9	57.6	3.8	* 1.9	+ 2.6	+ 0.0
Sanity Laevulose Schokolade	4.0	3.0	11.4	2.6	35.6	43.4	6.2	17.6	5.0	5.0
Sanity Mandel- u. Nussschokolade	3.1	2.6	12.0	2.2	26.2	53.9	4.3	14.3	— 3.0	— 4.0
Sanity Manit-Chocolate	4.2	2.5	10.0	1.7	31.9	43.7	4.8	21.3	— 6.4	— 6.6
Tropon-Chocolade	1.7	1.6	18.2	2.7	49.9	25.9	.	....	..	.....
Cocoa										
Charrasse Gluto-Cacao	6.4	6.7	21.5	3.1	40.1	22.2	16.3	* 1.7	+ 2.6	0.0
Dieto Cocoa	7.3	5.4	23.6	4.9	38.9	22.9	12.4	.....	+ 1.5	0.0
Jireb Diabetic Cocoa	4.3	3.9	19.1	3.4	47.9	18.4	much	....	....	.....
Plasmon Cocoa	8.9	6.6	52.8	20.9		10.8	5.1	.....	+ 0.0	0.0
Rademann's Diabetiker-Cacao	5.2	5.9	17.6	3.0	44.7	23.6	10.7	* 1.4	+ 0.9	+ 0.0

contains 25 percent of nitrogen-free extract, cocoa 38 percent, milk chocolate 51 percent, and sweet chocolate 67 percent.

FALSE CLAIMS OF THE MANUFACTURER

Cocoa is not commonly adulterated at the present time, and it is unfortunate that many manufacturers still feel that they must resort to exaggeration and misrepresentation in order to sell their product. Without mentioning the specific brands, the following false claims were found on the labels of certain cocoas listed in our tables; the purchaser who believes all he reads on the average cocoa label is foolish indeed:

"Owing to the removal of oil, it is certainly the most nutritious and wholesome cocoa now manufactured in the world." As a matter of fact, this brand contained more oil than most of the cocoas analyzed, and it is by no means the "most nutritious."

not soluble, it contains more cocoa butter than most brands, and it contains free alkali, showing that all three claims are false.

"Milk cocoa." The Reichert-Meissl number indicates the presence of no milk fat.

"Instantly soluble in hot water," "perfectly digestible," "unrivalled as a brain and nerve food." These statements are all false and misleading.

Wonderful Record of French Red Cross.

The expenditures of this society from August, 1914, to June 1, 1915, amounted to more than $4,000,000. The "Société Francaise de Secours aux Blessés Militaires," one of the three societies composing the French Red Cross, had organized in these ten months 773 auxiliary hospitals, representing 70,000 beds; 93 first-aid posts, 88 infirmaries, and 45 railway canteens.

St. John's Lutheran Hospital, St. Paul, Minn., is occupying a new building, erected at a cost of $60,000.

The MODERN HOSPITAL

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The Hospital's Responsibility

For a long time THE MODERN HOSPITAL has preached about the responsibility of the hospital for whatever mistakes or accidents occur on its premises, no matter whether due to poor technic, unwise orders by physicians, mistakes made by nurses or interns, or what not. A case in point has just occurred to emphasize the point:

Recently a woman patient in one of the hospitals in New Haven, Conn., died on the operating table while chloroform was being administered preparatory to an operation. The coroner was notified, the newspapers published long accounts under scare heads, and many physicians were interviewed about chloroform as an anesthetic. Some of these physicians censured the hospital, at least by inference, for using chloroform instead of ether or nitrous oxide.

The hospital has said nothing—how could it, without taking sides against one of its doctors, or even against the whole staff?

Hospitals, that is, administrators and trustees, do not prescribe the anesthetic to be used. Surgeons, as a rule, prescribe the anesthetic, excepting in those institutions that have a definite technic in regard to anesthetics, and in those cases the technic is created at the instance of the surgical staff, and the details are specified in rules created by the staff.

There is no doubt that chloroform, in this New Haven hospital, was prescribed by the staff as a whole, or by the individual surgeon in this case; it was being administered by an intern under the surgeon's eye. The anesthetic in the operating suite does not come under the administrative department of the hospital, and in most hospitals the surgeons would resent any interference with the anesthetic routine by an administrative officer or by the board of trustees.

And yet here is a hospital whose reputation is assailed by the coroner of the community, by the newspapers, and by the public, for a mishap over which the administrator could have had no control.

The moral is that hospitals *are responsible* for the service they give to the sick, and, as in the case at issue, no explanation will serve to void that responsibility.

The cure is for trustees to be very careful in the selection of their medical staff, and to watch their work after they are appointed. They can do this through their superintendent, and by means of the records of the operating rooms and the records of patients.

Physicians very often argue in favor of a special technic of their own; that they, and not the hospital, are responsible, and that therefore they should have things their own way. Here is a case that demonstrates conclusively that when an accident occurs, the hospital, and not the physician, bears the brunt of the criticism.

Patients will continue to die under the anesthetic, no matter whether it is chloroform, or ether, or gas that is used. But there are some pretty well defined principles involved in the anesthetic, and the hospital administrator and the board of trustees should recognize that whether they would have it so or not, the hospital will have to bear the brunt of the criticism whenever an accident occurs; and they should therefore insist upon having at the least a veto power over the establishment of a technic in any department, and on the physical direction of all the operations, including the personnel.

Surgical Team Work in the Hospital

In other pages of this issue will be found an address delivered by Dr. Noah R. Harlan before the staff of the Freeport (Ill.) General Hospital, on "Surgical Team Work in the Hospital."

Dr. Harlan's address contains much food for thought and must be of deep interest not only to surgeons operating in hospitals but to hospital administrators. Dr. Harlan pictures a very beautiful piece of technical service for the operat-

ing suite in the modern hospital, and without any question, his demand that the operating surgeon shall dominate the atmosphere of the suite during the time of the operation on his patient, we all agree to; and his arrangement and the duties of the individuals, each forming a cog in the technical machinery, must appeal to us; but the question comes up about the elaboration of the machinery. Do we need so many people as Dr. Harlan demands? Nine persons seem a great many to participate in an appendectomy, for instance.

At the meeting of the American Medical Association held in Atlantic City in June, 1914, and in a joint symposium of the section on surgery and that on hospitals, the writer of this editorial, in discussing the problem of surgical technic in the modern hospital, insisted that hospital technic was growing top-heavy, and that the technic demanded by surgeons was growing so intricate and complex that instead of becoming more perfect as time went on, it was obviously becoming more difficult and more unwieldy. The writer suggested in that discussion, that since almost all radical progress in institutional medicine had dated from some great war, it would probably take another great war to bring the surgical profession back to fundamental principles and to a simplified technic. Six weeks later the great world war broke out of a clear sky, and one of the most impressive features of that war up to date has been the handling of the sick and wounded, necessarily under a technic of the most radically simple sort.

There is no doubt that in the present war the vast majority of the major surgical operations are being performed by one surgeon, assisted by an orderly and with an anesthetist as the only other participant. Great numbers of our American surgeons have been participants in the surgery of the war, and let us hope that they will return home imbued, not only with the necessity for simplifying surgical technic, but with a feeling that every desirable surgical end can be achieved in a very greatly simplified technic, employing the service of at most: (1) the surgeon, (2) a surgical assistant, (3) a nurse and (4) the anesthetist. There may be in addition a "supe" nurse, to get things and take away things for the operating force.

If we are to carry along our burdensome technic in the operating department, merely for the purpose of giving opportunity for the training of more interns and more nurse pupils, that is one thing, but if our surgeons feel that their work absolutely demands nine persons to participate in an appendectomy, it seems likely that the present war ought to be an instance of disillusionment in this respect.

Dr. Goldwater's Retirement

Dr. S. S. Goldwater, after a service of less than two years as health commissioner of New York City, has retired from that office to resume the active administration of Mount Sinai Hospital.

It is fitting that THE MODERN HOSPITAL should recognize and comment upon Dr. Goldwater's retirement, for several reasons:

First, because for the first time in this country a hospital administrator has taken up the duties of health officer of a great city;

Second, because Dr. Goldwater brought into the service of the city of New York an experience and training and initiative that not only did him personally a very great credit, but brought a reflected credit upon hospital administrators everywhere;

Third, because THE MODERN HOSPITAL, of which Dr. Goldwater is one of the editors, is extremely proud of the record he has made in one of the highest and most responsible offices in the gift of the largest, richest and most influential community in this country. And it may be added that what is the loss of New York City, in the retirement of Dr. Goldwater, is to be the gain of the readers of THE MODERN HOSPITAL, because Dr. Goldwater, who has been silent in so far as editorial service for THE MODERN HOSPITAL was concerned during these two years, has begun to take up, not only active hospital work in his own institution, but the fight for better hospital conditions, better hospital architecture and a better national atmosphere concerning hospitals, and all that relates to them, through the columns of THE MODERN HOSPITAL. Coincident with this announcement of Dr. Goldwater's retirement, THE MODERN HOSPITAL presents, as a feature article, the story of the St. Louis Children's Hospital, for which Dr. Goldwater is consultant.

During his two years' incumbency of the office of health commissioner of New York City, Dr. Goldwater has initiated some notable advances in public health service. Pages would not suffice even to mention the items of public health advancement that he initiated and brought to practical development; but a few of these items are especially worth singling out, since, in the judgment of this writer, these items mark definite epochs in this era that concerns so vitally the problems of the public health.

To my own mind the most notable thing that Dr. Goldwater's regime created was the introduction, as routine practice, of the medical examina-

tion of industrial employees. With characteristic vigor and originality he initiated this new public health service in his own department of the city government and offered himself as the first subject for examination. That movement grew and has continued to grow, until literally thousands of industrial organizations are offering free, periodic medical examinations to their employees, and the incident medical advice and treatment when these employees are found to be afflicted with the initial forms of any disease likely to continue and grow. This service means an immense increase in the efficiency of the people; it will add to longevity and vastly increase human comfort and happiness.

Perhaps the creation of a bureau of public health education under a director, for the furtherance of organized effort to improve the conditions in the health of the people, might be classified as a part of the propaganda noted above; and likewise, the insistence upon a more vigorous and universal examination of school children. These three items, going hand in hand, must have great and lasting influence on the public health of this country.

Perhaps the next most important thing that Dr. Goldwater's administration did was to impress indelibly upon the public the fact that mental, moral and physical health are the most important concern of present-day civilization. Specifically to emphasize this point he brought the public utilities corporations of New York City upstanding, and compelled them to furnish hygienic and sanitary means of transportation for the people.

He ended for all time the lucrative vulture practices of the charlatans and quacks who had been creating large fortunes by playing upon the susceptibility of young people concerning their sexual functions; he likewise did more than any other and perhaps all other agencies combined to destroy the patent medicine industries, by compelling these vicious vendors to label their products with their chemical contents.

Perhaps the next most important thing that Dr. Goldwater did was incident to his campaign against alcoholism; those of us who are not prohibitionists and faddists on the subject must realize that this country, like almost every civilized country in the world, has been fast approaching a deplorable state in regard to the consumption of alcohol. Dr. Goldwater did not go to the limit demanded by the prohibitionists, but he did much to create a sane and sound mental appreciation on the part of the public as to where alcohol properly belonged. There is no doubt in the world, and the medical profession is almost unanimous on the point, that alcohol in its various forms has a definite and fixed place in civilized life, and Dr. Goldwater did more than almost any other agency to define that place.

One of the minor, and yet one of the most important, achievements of Dr. Goldwater's administration was the settlement of the problem of disinfection and fumigation as a part of municipal health service. We had been blundering along for years, fumigating after the infectious diseases in a routine and wholly inefficient way. Dr. Goldwater did the scientific work necessary to demonstrate the fact that fumigation as it was being practiced all over this country is worthless, and that soap and water and cleanliness had more to do with the destruction of the foci of the communicable diseases than all the gas fumigants and hot air ever contrived.

And last of all, and by no means the least of Dr. Goldwater's services to the city of New York, was the demonstration of what a public health officer should be, and of the necessity that such officer should be divorced from and entirely away from political influences and intrigue.

Thousands of vicious elements, with whose business Dr. Goldwater interfered, will be glad that he has gone; but fortunately, Mayor Mitchel permitted Dr. Goldwater to develop a logical successor to himself, and unless all the signs fail, Dr. Haven Emerson, who was deputy commissioner and sanitary superintendent under Dr. Goldwater, will follow in the latter's footsteps and give a real public health administration to the metropolis of this country.

JOHN ALLEN HORNSBY.

Mental Therapy in the Hospital

The most progressive members of the medical profession are turning their attention more than ever to the influence of the mind over the body, and are applying this principle at the bedside, and in the wards of the hospitals.

We all know that the strong hold of Christian Science on the people is due to the practice of mental suggestion; we know, however, that Christian Scientists have gone far beyond all reason in their claims, and that they are doing some very foolish things—some things highly hurtful to their patients, because they have allowed their one idea of mental suggestion to dominate all their activities. We know perfectly well that mental suggestion never healed a broken bone or removed a tumor.

But the medical profession has been taking a lesson from the Christian Scientists, and while Charcot and a great school of medicine have

known about and have practiced mental suggestion, hypnotism and the like for many years, our modern medical thinkers have got farther than they, because these latter students have had the benefit of modern medical science and the consequent ability to make for better diagnosis of disease.

These thoughts would be rather outside the realm of THE MODERN HOSPITAL, except that there is a hospital angle to the practice of mental therapy, to which we should pay some heed. We refer to mental suggestion from the standpoint of interns, nurses, heads of departments and the administrative head of the institution.

Patients coming to the hospital are always anxious about themselves, and their friends are anxious about them. Any little word of encouragement to a sick person, coming from an intern or a nurse, goes a long way. How eagerly the patient watches the expression of the nurse as she scans the thermometer scale, after the temperature is taken! We have known the whole attitude of a patient to be changed by the nurse's humming of a few bars from some cheerful song, just at a moment when something has occurred to frighten the patient about herself.

It isn't necessary to iterate and reiterate assurances that the patient is doing well and is going to recover; patients distrust too much protestation; but a mere assumption on the part of the nurse or intern that the case is going to end happily has great weight; some little suggestion about something that can be done "after you go home" means more to an anxious sick person than all the frank promises of recovery that were ever given.

The point to be made is that the hospital can greatly aid the doctor in the practice of mental therapy, and that is quite as important a duty as to nurse the patient well or give her good food or other attention.

American Health Progress

The American people are constantly praising themselves for their leadership and for their initiative and for their up-to-dateness in everything that makes for social and civic progress; they send missionaries abroad to teach "less fortunate" peoples how the great American nation does things; and they thank God—in fact, if not in so many words—that they "are not as other people are," as they set the halo on their heads more firmly.

Read what Dr. St. Clair Drake, executive secretary of the Illinois State Board of Health, has to say about how Springfield, Ill., "rose to the occasion."

The report of the public health survey of Springfield, made something over a year ago by Franz Schneider, Jr., as part of the general social survey of the capital city, conducted by the Russell Sage Foundation, has just been distributed in the form of an illustrated book of about 160 pages.

This report contains details of an investigation of practically every phase of sanitary conditions and public health administration and work in Springfield, together with the results of the tuberculosis survey made by Dixon Van Blarcom, field secretary of the National Association for the Study and Prevention of Tuberculosis, and the study of the milk protection and dairy conditions carried out by the State Board of Health.

One of the interesting features of this report not ordinarily found in such documents is the comparison of the city's sanitary conditions of the present with those of the past. This is made possible on account of the fact that Springfield has already had one sanitary survey which, in certain features, is said to have been the most thorough to have been made up to that time in any American community. This was the investigation of water supply, sewage disposal, shallow wells, vaults and other sanitary conditions conducted in 1911 by the Springfield Health Department under the jurisdiction of Dr. George Thos. Palmer.

While extending into many other fields Mr. Schneider's report covers some lines pursued in the 1911 survey, and the unfortunate fact is set forth by Mr. Schneider that while Springfield has been conversant with its sanitary faults for a period of four years, these conditions have not been remedied to any considerable extent.

Now read the last paragraph over again.

WILLARD PARKER MOURNS ITS PRESIDENT

Resolutions Express Regret and Sympathy on Death of Dr. John H. Huddleston

At the regular meeting of the Willard Parker and Riverside Hospitals, New York, held at the Willard Parker Hospital on November 9, 1915, it was unanimously

RESOLVED, That the Medical Board has learned with profound regret of the untimely death on October 30, 1915, of its president, Doctor John H. Huddleston. By his death the board has been deprived of an ideal presiding officer—a man of judicial temperament, pleasing personality and broad knowledge of the great work in which these hospitals are engaged.

RESOLVED, That the medical board feels that the death of Doctor John H. Huddleston is a great loss to modern medical science and sanitation. Not only was he possessed of exceptional attainments, but he unselfishly devoted his energies, time and interest to the furtherance of all practical measures for the advancement of the public good in these fields.

RESOLVED, That the members of the medical board mourn the loss in his death of a dear colleague, ever kind and courteous and sincerely attached to all of them, not only officially, but by close ties of personal friendship.

RESOLVED, That we offer to the family of Doctor Huddleston our deep sympathy and condolence in their affliction and express the hope that they will find some comfort in the consciousness of the profound respect and sincere esteem which Doctor Huddleston inspired in his colleagues and in the remembrance of his great usefulness to his fellowmen in the important activities which he so well and so thoroughly performed; and furthermore be it

RESOLVED, That these resolutions be spread upon the minutes of this meeting and that copies be transmitted to the family of the deceased and to the medical press of this city.

DR. JOHN W. BRENNAN,
DR. HENRY W. BERG,
For the Medical Board.

Dr. F. C. Levine, New Philadelphia, O., will head a private sanitarium soon to be opened at that place.

THE PROBLEM OF BED-PAN COVERS

How Some Good Hospitals Meet a Perplexing, Annoying and Disagreeable Duty—No Standard Method and No Commercial Device Offered

A SYMPOSIUM

So fundamental and apparently simple a problem as a covering for bed pans in transit has not yet been solved. A number of inquiries have recently come to THE MODERN HOSPITAL, asking about a bed-pan cover that would meet all the requirements, and the subject was deemed of sufficient importance to justify a little symposium.

We, therefore, sent out inquiries to a few good hospitals, and below are published some of the replies, which, by the way, are not very satisfying.

It is recognized that the following conditions must be met in a bed-pan cover:

1. It must be sterilizable.
2. It must be practically noiseless.
3. In proportion as it prevents the diffusion of odors along corridors, it will be the more acceptable.
4. It must be always available; hence must be of such physical character that it can be kept nearby, but out of the way.
5. It must not be unsightly.
6. It must be easily carried and handled by the nurse, along with the pan itself.

MASSACHUSETTS GENERAL HOSPITAL

We have been unable to find a suitable bed-pan cover. We have used towels and rubber dams stretched over wire frames and glued on. These were quiet, but not durable and not very sanitary. Recently we have been using a molded metal cover, nickel plated. These are easily kept cleaned, but they are noisy if dropped, and rattle. We should like to hear what others use.

JOSEPH B. HOWLAND,
Asst. Administrator.

THE ROOSEVELT HOSPITAL

We use in this hospital a square piece of muslin for bed-pan covering, marked and laid aside for this special purpose.

CHAS. B. GRIMSHAW,
Superintendent.

WESTERN PENNSYLVANIA HOSPITAL

Your letter in regard to transporting bed pans from the service rooms to the patients' rooms has been referred to me. I would say that we cover them with a square of ticking. I have never seen a metal box cover, but have had suggestions from physicians to that effect. However, I believe it would be noisy and very difficult to keep such a vessel sweet and clean. I would be glad to hear of any suggestions.

JESSIE J. TURNBULL,
Directress of Nurses.

THE SOCIETY OF THE NEW YORK HOSPITAL

We make bed-pan covers of cotton cloth. They are about a yard square, and have a special mark to identify them. We have used this method for a great many years.

THOMAS HOWELL,
Superintendent.

PRESBYTERIAN HOSPITAL OF CHICAGO

For bed-pan covers we use an 18x24-inch denim or ticking cover, at a cost of 1½c when using new material, and only the cost of the labor when using old material. The advantages are: cheapness, as they can be made mostly from old material; cleanliness, as they can be laundered daily; convenient for the nurses to handle, and for this reason they always use them; they are light and noiseless, and when kept clean they are not unsightly.

ASA BACON,
Superintendent.

PHILADELPHIA GENERAL HOSPITAL

In the Philadelphia General Hospital we have squares of rubber similar to that used in making rubber blankets, which are of sufficient size to enable the nurse to take hold of both sides of the bed pan, thus insuring that the cover will be kept in place.

The objection, it seems, to the metal covering would be the inability to procure a tight-fitting cover. It might be possible to secure a pliable metal cover which would slide in a groove, somewhat similar to the doors of an old-fashioned heater.

It would be interesting to read the opinions of others on this subject.

J. C. DOANE,
Chief Resident Physician.

UNION BENEVOLENT ASSOCIATION HOSPITAL

The question of the covering and protection of bed pans is one we feel has never yet been satisfactorily solved, and I shall be among the most grateful if you succeed in getting good suggestions.

We find that the heavy square of "factory" we now use (a *clean* one each time) is fairly satisfactory, as our distances are not great. The covers must be sufficiently large to envelop the pan entirely, and in case of very strong odors, a square of rubber sheeting is sometimes added.

Sorry not to be able to give you something better.

IDA M. BARRETT,
Superintendent.

ST. BARNABAS HOSPITAL

In our old hospital building we are still using thick muslin covers, made especially for them, but in our large, new pavilion I designed the rooms so that between each two there is a toilet and bath, also the same off each ward, so that the sad spectacle of pans being conveyed through the halls has been eliminated; were I designing a medical wing I would place a sufficient number of sterilizing hoppers, so that excreta would not have to be taken long distances.

In my old hospital at Brooklyn we used a large rubber sheet over the muslin cover, and that seemed to serve all practical purposes.

HARRIET S. HARTRY,
Superintendent.
Per G. J. H.

Charity Hospital of New Orleans

The admissions to this hospital have increased from 9,576 in 1909 to 16,742 in 1914; the cost of administration from $203,047 to $297,283. The editor of the New Orleans *Medical and Surgical Journal*, in commenting on the improved efficiency of the Charity Hospital, publishes the following table to prove further that the present administration is worthy of the highest commendation:

COMPARISON OF HOSPITAL COSTS—1914

Hospital	No. Beds	Admissions	Bed Days	Per Capita
Bellevue Hospital	1,329	12,184	490,108	1.75
Louisville City Hospital	457	4,319	150,285	1.74
Boston City Hospital	995	12,803	196,688	1.81
Worcester City Hospital	.	.	97,175	1.62
St. Louis City Hospital	1,009	11,284	356,840	1.13
St. Paul City Hospital	215	5,165	162,156	1.07
San Francisco City Hospital	700	8,488	11,555	1.07
New Orleans Charity Hospital	1,004	16,742	277,632	0.86

HOSPITAL, MEDICAL *and* SPECIAL MEETINGS

Medical and Surgical Efficiency in Large General Hospitals[1]

FREDERIC A. WASHBURN, M. D., Resident Physician, and JOHN F. BRESNAHAN, M. D., Assistant Resident Physician, Massachusetts General Hospital.

Large hospitals as a rule are well organized and effective in their efforts for the welfare of patients. Were this not so, it would have been difficult for them to have become large or to remain so. The modern ideal, however, demands something more than merely maintaining a high standard of organization; it demands intelligent contributions towards the prevention of disease, towards the after-care of the sick, and towards the social aspect of a "case," of the patient's family as well as of himself.

The modern hospital is coming to be looked on as a laboratory in which to study these questions of increased efficiency, and such an institution does its full duty only when it contributes its results to the common fund of what may be termed "hospital knowledge." It is with this thought in view that we offer something of what has been attempted along these lines of efficiency at the Massachusetts General Hospital during the last few years.

Before speaking, however, on these aforementioned topics, we would describe a few of the methods we have found of value in striving for more thorough work.

Some four years ago our surgeons realized that to obtain the best results, greater specialization in their particular field was necessary, and accordingly a system of special assignments of cases to certain men, best qualified to operate for the particular malady in question, was devised. In other words, patients requiring gastric surgery were assigned to one surgeon; those suffering from carcinoma of the uterus to another; the prostatic hypertrophies to still another; and so on. The results have been encouraging. The mortality percentage has not only been lessened, but more difficult cases have been successfully accepted by the operators, as they have become more familiar through constant practice with the difficulties of their especial operative divisions.

Another innovation made recently by our surgeons is what is known as "fracture cards." When a patient is discharged from the wards of the hospital to the out-patient department, for treatment of a fracture, a card containing details of the cause, treatment, and x-ray results of the fracture, is made out by the house officer on duty in that particular ward. This is filed in the out-patient department record room, and all subsequent data are added by the out-patient physician. This system of cards not only gives the out-patient physicians complete and accurate data upon which to work out their after treatment, but also forms a complete and permanent record of all fracture work done in the hospital, and can be used not only for statistics, but to bear out any points of treatment which the surgeon may wish to emphasize when writing a paper. In other words, it epitomizes in accessible form, all fracture work.

On the medical side of our hospital "the special assignment plan" has been only tentatively tried, but the indications are that before long our medical men will realize as strongly as our surgeons do now, the value of special fields for special men. We have at present in the hospital a young physician who has devoted himself for the past few years to the more scientific methods of heart study. An electrocardiograph has been installed, and his expert services in the finer grades of heart diagnosis are in constant demand. We have found that while these refinements of highly accurate diagnosis do not materially affect the treatment, they have considerable bearing upon the prognosis; and that, after all, is a matter of great importance to the patient.

An attempt at refinement in diagnosis has been made by the cooperation between our surgical and nerve departments in emergency cases of head injury. When a man is brought to our accident room with a question of cranial injury, he is seen in consultation by one of the younger men of the nerve visiting staff. This consultation has proved of considerable value to the operator, for it enables him to open the skull at the point which can be perhaps more properly determined by the nerve specialist than by the general surgeon.

A rather novel method of "checking up" difficult diagnoses has been tried out by our visiting staffs with considerable success. On Wednesday at noon of each week, the combined house and out-patient services unite for a ward visit, which is limited in time to one hour. During this visit the difficult cases are brought out, and the history and physical examination read aloud by the physician in charge. Each doctor present is then required to write on a slip of paper his diagnosis and the reason therefor and to sign his name. These slips are then collected and read out by the physician in charge of the case and a short discussion follows.

In our department of social service a constant effort is made towards increasing the efficiency with which a patient is handled, not only from the socio-medical point of view, but also from the socio-familial and the socio-occupational point of view. The field of social service is so broad and has so many ramifications, that unless one is careful, one's efforts are dissipated, owing to the size of the problem. Our care, therefore, has been to concentrate our energies along a few broad lines.

An interesting detail of efficiency along one of these lines is illustrated, perhaps, by the cooperation between the social service and the dietitian of the hospital, in the attempt to send out patients requiring special diets, with a *definite* idea as to just what they should eat after leaving the hospital. We have had printed diet lists made, which are given to our diabetic, nephritic and gastric patients. They are given careful personal instruction by our dietitian and social service worker as to what they must do to keep well. They instruct the patient in detail as to the proper method of estimating the correct amount of carbohydrate, protein and fat to be eaten daily. In difficult cases a collection of menus is given to the patient. This has proved of inestimable value in making life worth living to the diabetic who is condemned for years, to what would be an extremely unpalatable menu, were it not for the instructions which insure a variety in form and taste which can be supplied by the experienced dietitian. This form of instruction alone would probably be of little value were it not for the faculty of the experienced social worker in seeing that the

[1]Paper read before the Conference of the American Hospital Association, San Francisco, June 22-25, 1915.

interest of the patient's family is enlisted towards carrying out the program. Those in charge of this work report very encouraging results of their efforts; for it is found that most patients take sufficient interest in themselves to write at regular intervals and explain as to how they are getting along and as to whether or not they keep sugar-free. The fact that patients are usually anxious to keep in touch with the hospital which presumes to take an individual, rather than a *case* interest in them, leads us to speak of the development of what we call the follow-up system in our hospital.

We make an effort to keep in touch with every patient after he leaves us. In most cases we are content to hear from him once a year, but in many cases, especially those in which the character of the man's disease is of an insidious nature, we make an effort to hear from him at more frequent intervals. The mechanism of this follow-up system in the main hospital may be briefly described as follows:

In our central record room there is filed under the name of each patient a card known as the "End Result Card." This card contains all the important data in very condensed form. In other words, the name and address of the patient, of his friends and of his physician; the preliminary diagnosis, the final diagnosis. It contains the detail of the medical and surgical findings, and the condition of the patient at the time of his discharge. One year following his discharge a letter is sent to the patient, asking him to return to the hospital for inspection, provided he lives within a reasonable distance. Should he live too far away, he is asked to forward us, by return mail, a complete synopsis of his physical condition, from the time he left the hospital up to the present. The result of our inquiries, both as to the inspections and the data mailed us, is entered upon this "End Result Card," so that each card represents the important points of the patient's history, of his stay in the hospital, and of his subsequent medical history. In other words, it is not necessary to consult old records and recent correspondence to find out about any case; it is kept to date on his "End Result Card." In addition to the yearly letter, we have also what are known as "Case Groups." For example, the surgeon whose special assignment is gastric surgery will, from time to time, send return postcards to each of his gastric group. The man interested in hysterectomies will request that cards be sent to his group. The same applies to the goitre group, to the fracture group, to the breast cancer group, etc. The data contained on these postcards is entered daily upon the End Result Cards, as well as in the patient's records. An additional refinement of this follow-up system is, that should the physician in charge be especially interested, either from a scientific or from the purely humanitarian fear, that the patient might not take care of himself, he merely puts his name on the list, and the man is notified monthly to return for inspection.

In our out-patient department we carry this follow-up system a little farther than we do in the main hospital; though we have long ago learned that we should not attempt to follow up every case admitted, for we have a large out-patient department, averaging between six and seven hundred visits a day. We have lately confined our efforts to selected cases; for example, in the children's clinic, let us suppose that a badly neglected case, which requires rigid supervision of the feeding and of the home hygiene, is admitted. A card is made out for the clinic card catalogue, containing the name and address, the last most painstakingly accurate. Our special form of card has a condensed calendar printed thereon. After the case has been examined by the physician, he notes in a space provided on the history card or record, the date upon which he wishes the patient to return—let us say, for example, one week from date. At the end of the morning clinic, all the histories are collected and the date on which the patient is to return is copied on the individual's card calendar, which we have just mentioned. These cards are then filed under the dates on which the patients are to return. Should a patient not return on the proper date, he is given two days' grace and then a postcard is sent, asking that the mother bring the child to the hospital as requested. Should she fail to do this, a return postcard is sent, asking that we be informed as to the condition. Should no notice be taken of this return postcard, the social worker makes a visit if the doctor thinks the case is urgent; or should a personal visit not be necessary, a letter is written, asking the favor of a reply.

It is a debatable question as to just how far the responsibility of the hospital extends in looking after people. It may be that our tendency is to assume too much of the burden; but our results in following up these selected cases of either urgency or neglect, lead us to think that we are on the right track. This whole question of the future scope of the work undertaken by our hospital is a big one, and it seems to us that it can be answered only by the facts brought out in the line of trial and error.

Perhaps one of the most interesting phases of our progress lately is the investigation of the relation of occupation to disease. When a patient is admitted either to our out-patient department or to the main hospital, we find out with considerable care as to accuracy and detail his occupation. For him to tell us that he is a shoemaker is not sufficient. We want to know what part of the shoe he makes and what his particular share in the making is called. That is to say, whether he be a cutter, a buffer, a nailer, a stitcher, a laster, a treer, a vamper, or what not. These various subdivisions of the occupations are classified as accurately as possible, though as the work has never been done before, there is no guide to follow in the cataloguing. What discoveries our physicians may make as regards the relationship of occupation to disease, we cannot say, but if what has been done along the lines of lead poisoning is any indication, we may look for extremely beneficial results of our work. In our hospital, all workers in trades using lead are referred to the attention of a social worker who is specializing in occupational diseases. She fills out a form on which is stated not only the history of the man's disease in brief, but also the history of his occupation. The actual social work which follows is as interesting as it is important. Should he be found suffering from plumbism, his employer is interviewed and the actual working conditions looked into. If necessary a campaign of education as to the prevention and the spread of lead poisoning is undertaken. The education of the employer as well as the workmen embraces not only hygienic improvement, discussions as to washing facilities, the value of respirators, etc., but also takes the form of the distribution and posting of printed notices containing rules for the avoidance of the poison, and includes also personal interviews with the workmen. Our social service reports that the character of their reception at the various plants has been most cordial and welcome. Requests for literature from distant points have shown how the news of the good work has spread, and we are becoming more and more convinced that it is not a case of the employers being callous as to the question of lead poisoning among their workmen, nor

of the workmen being callous as to the question of lead poisoning among themselves, but that it is just a case of either not knowing, or not realizing in time, the insidious danger of lead poisoning, and that both employer and workmen are as a rule quite willing, and in many cases quite anxious, to cooperate towards the prevention of this disease, if anybody will but take the time and trouble to instruct them how it may be done.

That routine we have just outlined as regards plumbism is being gradually extended so as to include the other dangerous trades. The ideal we are attempting to reach is the prevention of a trade either becoming dangerous, or remaining so, to the patient whose health is in our care. We feel that we should aid with all our strength, the prevention of disease, and if conditions force us to do so, attempt to persuade the employers to change the patient's occupation to one in which he is less susceptible to involvement.

The transferring of patients to other institutions has always offered a broad field for social work, but latterly we have been paying more attention to the details of this form of welfare. We are endeavoring to place the patient where he will be most happy, or perhaps where it will be most convenient for his family to visit him. Then, too, our social service is learning to put far more time than ever before in investigating the resources of the patient's family, and selecting the institution to which he is sent with a view to those resources. We feel that it is the hospital's duty not merely to place a man who has become a chronic invalid in a chronic hospital, but to place him in such a hospital in which the entire family will not be impoverished by spending their financial energies to support the patient in a pay institution, when he might be made quite comfortable in one to which there was no expense attached. In other words, our hospital conscience is becoming aware of the hospital's duty to the family as well as to the patient.

It has become quite patent in recent years, especially to those most interested in the admission of patients to charitable institutions, that we must extend our lines so as to include among our beneficiaries not only the very poor who already receive free treatment from the most skilled of our physicians, but also the man whose income bars him from the charitable institution but does not admit him to a private institution worthy of the name of an up-to-date hospital. It is the man of small income who cannot afford to make a circuit of consultants for expert reports as to his eye condition, the question of a Wassermann test, bismuth x-ray interpretation, etc. It seems to us that there is a duty that our hospitals, with their complete plants and staffs, owe to men of small income. Would it not be a magnificent increase in the efficiency of our hospitals were they to devote a certain portion of the day, either afternoon or evening, to a clinic manned by a well paid staff of experts in the various branches of medicine, where the man of limited income could be admitted for a reasonable fee and obtain the routine examinations which would be otherwise denied to him because of their expense? Why should not the general practitioner have an opportunity to avail himself of this consulting clinic? We feel that he should.

The final topic we wish to bring to mind is the one which is creating so much discussion in the hospital world—namely, the feasibility of the full-time staff. It is a question that must be well considered by the hospital administrator who desires to increase the effectiveness of his organization. We must realize that nobody does his best work in an undertaking which is but his second interest, and that should a physician be enabled, through a sufficient salary, to devote his entire time to hospital work, we should be enabled to command a quality of endeavor otherwise impossible. For generations noble men have given lavishly of their time and skill to the needs of our hospitals; but the expenditure of energy required by modern times to gain a livelihood, and the amount of study and research required to keep abreast of medical progress, tend to make the practicing physician's traditional devotion to charitable hospitals more and more difficult to secure.

It is a question we must meet and meet squarely. The best interest of our hospital patients demands it.

There are several methods of meeting the issue. It has been suggested that a "pay clinic" be instituted in conjunction with the free hospital, or that certain selected members of the staff be placed on a salary, or that special consultation clinics, where a moderate fee is charged, be established. These various suggestions all have value, and the final solution of the problem may embody them all, within certain limits. It seems to us, however, that for the present at least, the ideal arrangement is for large hospitals to reciprocate with the teaching staffs of our medical schools. Teaching affords the one unrelenting stimulus to the physician for keeping abreast of medical progress and makes for the most careful work. No man can unconsciously retrograde long in the presence of students, nor can patients fail to gain by the collective scrutiny to which their ailments would be subjected. This plan of having our hospital staff made up largely of the teaching staff of an adjacent medical school would mean that each man would be paid a salary, which, though moderate in itself, would so supplement his teaching stipend as to pay adequately for his time.

We realize that we have but touched upon many important subjects. Each one of them is worthy of a paper in itself. If, however, we can help hospital administrators to think more deeply upon the broad questions of hospital development and consider more carefully how the hospital should serve the community, we have attained our object.

Medical Education[1]

BY BERNARD FRANCIS McGRATH, A. B., M. D.,

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Viewed in a broad way, the practice of medicine embraces every phase of the medical world, and the strength of its structure is dependent upon the solidity of its foundation—namely, medical education.

Medical education is the development of the individual to his fullest capacity as a physician.

The physician's life. The scientific functions of the physician are involved in the prevention, alleviation and cure of both the physical and the mental ills of man. From the very nature of these functions it is evident that the physician is brought into most intimate contact with the body, the heart and the mind of the human family.

Because of these manifestly serious scientific responsibilities; because also of this position of sacred trust in the family and community; and, further, because of the physician's influence as to the well or ill-being of the entire medical world, it follows that highest attainable standard of medical education is the only logical one, and should be demanded by humanity on the plea of self-protection.

Hence, predicated for medical education is the duty to

[1]Paper read before the First Annual Convention of the Catholic Hospital Association, Milwaukee, June 24-26, 1915.

give to the world the physician who, first, is adequately equipped in the art and science of medicine; and, secondly, is an individual of sterling ethical qualifications.

It is obvious that the first requisite for marked success in the practical application of a science is that a fundamental knowledge of this science exists. But the existence of such scientific knowledge can only be realized by the genuine scientist carefully working through a long period of time.

Broadly considered, medicine is a study of all the sciences involved in the normal and the pathological biology of man. It is an undeniable fact that a fundamental knowledge of many of these biologic sciences is far from realized. This inadequate state has been attributed to the comparative youth of modern medicine, but there are other and avoidable causes which have retarded our scientific advancement.

The realization of genuine scientists and the correct principles of ethics in medicine depends, in the first place, upon the correct selection of the student; and, secondly, upon the soundness of the educational system in which the student makes his medical course.

In selecting the student, his natural and acquired qualifications should be carefully considered. Natural qualifications embrace physical, intellectual and moral aptitude for the life of the scientific and ethical physician; the acquired qualifications involve a preliminary training which is a fitting preparation for the study of the art and science of medicine.

Aside from normal health, physical aptitude is a reflex constitution adapted for skill in medical art; for example, a bent for the technic of the laboratory, for the various tests of diagnosis, and for the treatment of disease, such as the surgical or some other special phase.

Intellectual aptitude is a special talent for the art and science of medicine in contradistinction to a talent for mechanics, law, politics, business or some other path of life.

Moral aptitude is a particular, sterling type of manhood which is essential for honest scientific research and for the intimate relationship of the physician with the life of the human family.

Preliminary training. This should consist of a true liberal education and special courses in physics, mechanics, chemistry and biology of the lower grades of being. Liberal education involves a fundamental knowledge of the principles of logic, ethics and natural theology. The science of logic is the instrument of correct thinking; the science of ethics is the instrument of correct human conduct, the proper relations of man to man; the science of theology covers man's actions toward the Deity. Further considered as essential, at least as a strong desideratum, is a practically working knowledge of certain languages, such, for example, as Latin, German and French.

A standard such as this for entrance into the medical course may appear unnecessary, but is it too high when viewed in the light of the physician's grave responsibilities?

Medical course. The next essential for the development of the scientific and ethical physician is a medical course which is adequate. This course should be viewed as beginning with the student's entrance into the medical school and ending with his graduation from hospital internship; hence, the training in medicine may be divided into the school and the hospital period, and to each of these periods the fundamental principles of an educational system should be applied.

The educational system of the school period. Man, the subject of the study of medicine, is an organized unit composed of physical and mental elements. These elements comprise a unified system of various parts which are essentially interrelated. On these interrelated parts of man, normal or pathological, all the sciences of medicine are based. Hence, the first requisite for the organization concerned in the study and teaching of the medical sciences is unity, unity in the structure and unity in the working. Thus, the building should embrace medical school and general hospital combined as one. The individual departments should be complete in number and character, located according to their natural relationships, fittingly equipped, and operated as a harmonious unified system. Further, and decidedly fundamental, they should be manned by educators who are duly qualified. To repeat, for the sake of emphasis, all the component parts of this educational organization naturally, therefore, should be harmoniously interrelated, and thus maintained by constant, continuous and methodical correlation.

That such structural and functional unity would best conduce to adequate efficiency is obvious; but that this uniformity is far from commonly realized in the medical education of today is manifest. In fact, for the most part, we see the medical school and general clinical work widely separated in location, incomplete in their departments, hence, lacking in thoroughness and not duly unified in their operation.

The departments of the medical course should be comprehensive in number and character. This involves a question of serious importance to the medical world. Lack of such completeness has conduced to much disorder, disorder in the regulation of the practice of medicine, disorder in the ranks of the medical profession itself.

The completeness of the departments of medicine should naturally be based upon the life of the physician. The physician's life embodies his scientific functions and his ethical relations. As previously stated, the scientific functions of the physician are concerned with the prevention, alleviation and cure of both the physical and mental ills of man; the ethics involved covers his relations to man in general, and to the patient and the fellow physician in particular.

In the light of this definition of the physician's life some points of manifest importance present themselves for most careful consideration.

In the first place, we know that when the body is the victim of invasion by an injurious agent two principal sets of phenomena result, namely, 1, a series of specific pathologic processes; 2, a series of specific protective processes. Hence, the agent which causes the disease stimulates at the same time specific efforts on the part of the body to cure itself. Therein lies nature's indication as to the method of scientific treatment. An endeavor in this direction is seen in the application of vaccines and antitoxins.

In a certain sense, then, the dictum, "*similia similibus curantur*"—like cures like—is true, and it would seem that in this observation of nature's plan a special school might have had its origin. Thus we see the possibility of a special school of medicine being unscientifically erected upon the tardiness of our own scientific advancement.

Since the physical and mental elements of man are harmoniously related in the normal health, it is but natural that a disturbance of the processes of the one should conduce in some degree to derangement of the processes of the other. Further, generally speaking, the treatment of disease of the one should be favorably influenced by efforts to restore a state of equilibrium in the other. This brings out the point of the influence of the condition of the mind upon the well-being of the body, a phase in the causation and treatment of disease that is an essential part of the

science of medicine. Yet failure to embody or duly emphasize this point in medical education has contributed to the existence of charlatans, and to the origin of a special school or sect which applies mental treatment absurdly, even dangerously, as a general principle, while it properly involves a particular, scientific application.

Again, disease may be locally limited or variously extended; it may consist either of structural lesion with varying disturbances of function, or of functional derangement alone. There is a certain class of conditions commonly and indefinitely termed neurasthenic, neurotic and the like. The cause of these is frequently assumed to be mental, whereas, in fact, many of them are due to some physical irritation, such, for example, as stasis in an old scar, or some other form of local congestion. Here again lack of emphasis in the regular medical course has contributed to another set of special schools, whose foundations are based upon massage, electricity, mental treatment, and the weakness of human nature.

To repeat, for the sake of stress: the practices of these various sects, which are dignified with the name of schools, are based upon nothing else but essential parts of the science of medicine which have been neglected in medical education. It is no wonder, then, that legislators experience difficulty in regulating medical practice. Hence, the departments of the educational system should be comprehensive in number, character and thoroughness.

The faculty. This should comprise a harmonious body of qualified educators, selected for ability as scientists and teachers, and all the work of the school-hospital should be under their control. The function of the faculty is twofold, namely, first, scientific research, aiming at the establishment of medical science upon a firm basis; second, the correct training of the student for the responsible life of the physician.

Predicated, then, for the educator are natural and acquired qualifications. Natural qualifications involve the physical, intellectual and moral aptitude which is requisite for genuine scientific research in medicine and for the role of educating the future physician; the acquired qualifications embrace the measure of scientific knowledge possessed and of medical art developed.

Here scientific knowledge comprehends not only a consistent knowledge of the art and science of medicine, but also of the generally applicable principles of logic, ethics and natural theology, and of the particular principles of medical ethics.

It is perfectly obvious that scientific research demands a fundamental knowledge and strict application of the correct principles of logic, in order that false premises and illogical deductions be avoided in the solving of problems.

It is also patent that for the scientist and educator in medicine a fundamental knowledge and strict application of ethical principles are essential in the interests of honest research and sound teaching.

Further, it is manifest, what the evils of the medical world emphasize, that that medical institution which does not embody at least natural theology is incomplete in nature, is a materialistic, soulless thing.

That in general a standard such as this is not realized in the medical faculty of today, is a common observation. In fact, a unified faculty, working in harmonious correlationship with complete control of an organized medical unit, does not appear to exist.

Again, commonly the complexus of the faculty is not determined by the criterion of true worth. As a result of this illogical and detrimental policy there are institutions for medical training which embody few true scientists and educators, with the obvious consequence of published research which little enhances scientific advancement, and of education in medicine that is far from adequate for the responsible end.

The medical text-book. This should be composed of matter expertly selected for its scientific value and classified in a logical order. That present-day medical text-books are in general unscientific is a fact emphasized by authoritative educators. This is due, in the first place, to a dearth of scientific educators in the medical profession, and, in the second place, to a commercial spirit that is unethical and destructive.

An attitude, which is known to exist in some places, that anything is good enough for a medical text-book, is unintelligible, viewed in the light of scientific education. The resultant of such an attitude is a serious injury to the science of medicine, and the degree of this injury is parallel with the popularity of the author. Popularity in the profession of medicine is no index of a genuine scientist and ethical physician, as observation teaches.

It is obvious that the sciences embraced in the normal biology of man are the foundation of all the other medical sciences, hence, until these sciences are established upon a firm basis, the entire superstructure of medicine must necessarily involve much of error.

Structure and function should be studied from the standpoint of embryology, and not as more or less isolated groups of developed states. Thus considered, anomalies and developmental defects would become more intelligible, and knowledge of the various systems, for example, the gastro-intestinal, etc., would be scientifically based.

Pathological biology should be viewed as digressions of the normal processes, varying in characteristics with the field affected, and with the specific nature and energy of the injurious agent. Thus, for example, a particular tumor would be studied as a digression of the normal cellular elements, with resultant hyperplasia, and as due to a special diverting cause. Hence, tumors should not be considered as entities, unscientifically classified with an unending list of unintelligible, descriptive names.

Diagnosis and treatment. The importance of these phases of the art and science of medicine is manifest, but time does not permit of a free discussion of them here. There are a few points, however, which it may be well to emphasize.

The first step in diagnosis, and a fundamentally important one, is the history. This, to be adequate, should be comprehensive and exact. From the history there may be elicited: 1, an inherited or acquired tendency to a specific digression from the normal, or a specific receptiveness for a certain injurious agent, for example, a tendency to cancerous digression or a receptivity for the agent of tuberculosis; 2, exposure to invasion by a particular pathogenic cause; 3, information as to the power of the individual's resisting forces. A history thus obtained would not only be enlightening for immediate use, but would also contribute to the scientific study of fundamental problems, such, for example, as the problem of heredity. However, despite such importance, the matter of the history is not duly emphasized in the course of the student, as is manifest in the records of any medical institution.

Diagnostic tests. Among the causes of disease are various chemical agents, some of which come from without, while others are developed within the body itself. There are pathological conditions the causes of which have not yet been demonstrated. It would seem that the science of diagnosis must be developed along the lines of what, for lack of a better term, may be designated bio-chemical tests. It is obvious that many of our present-day methods of diagnosis are indefinite and unscientifically based.

Treatment. The department of preventive medicine is of fundamental importance. This embraces the science of hygiene and sanitation. Hygiene consists of all those measures, such as diet, exercise, rest, etc., which assist nature in conserving and developing the physical and mental energy of man. Sanitation comprises such means as protect the individual, the public in general, against invasion by injurious agents. Important as is this department, it is far from duly emphasized in the medical training of today. Because of this lack of emphasis, because also of the resultant skepticism of the public and the omnipresent obstructiveness of politics, preventive medicine has not attained its rightful place in the medical world. Financial encouragement being withheld, relatively few competent physicians specialize in this field, and hence a great work, both economic and humane, is not adequately accomplished.

The role of the physician in the treatment of disease is as an aid to the natural forces of the body, hence scientific treatment must be evolved from a knowledge of the fundamental sciences of medicine. It would seem that when these sciences shall have been better known many of the present-day methods of treatment must be considerably modified; for example, it is probable that with the establishment of those sciences upon a firm foundation, the field of operative surgery shall be far more narrowly limited.

The present popular position of surgery appears to be rather abnormal, and it is a question whether treatment as an art and science has not been retarded by such isolated emphasis. At all events, it seems that the medical world of today is possessed of a surfeit of operators and a dearth of scientific surgeons.

The period of hospital internship. Since this is an essential part of the proper preparation for the practice of medicine, the hospital in which the intern is trained should be conducted on an educational basis. This predicates the application of the fundamental principles which have been discussed under the caption of the school period. Briefly repeated, the hospital should be planned as an organized unit, with the departments complete in number and character in accordance with the nature of the particular institution. All these departments should be fittingly equipped, located with respect to their natural relationships, manned by a staff duly qualified as educators, and operated as a unified system. Educational discipline should pervade the hospital from the lowest to the highest position.

The fitting preparation for specialization is a complete intern service in a general hospital.

The first duty of every medical institution which assumes the responsibility of caring for the sick is, that each patient be given the benefit of the best service of which the art and science of medicine is at present capable. This treatment is the right of the individual who entrusts his health or life to such an institution.

The resultant of the educational plan applied to the hospital would be more painstaking work, efficiency in the care of the patient, the scientific development of the staff as a whole, the elevation of the hospital's standing before the public, the advancement of the art and science of medicine, and increasing betterment of humanity in general.

Ethics. Failure to lay stress upon the correct principles of ethics in medical education has contributed to many glaring evils in the medical world. The God-given right to life of every creature, that right which begins with the first moment of existence, is either ignorantly or culpably disregarded.

A recent propaganda for the regulation of birth-rate contains in some of its presentations certain intimations as to means, which are fundamentally unethical, crude, and would be destructive of both the morals and the health of the human family. There are correct principles of ethics covering every phase of life. The solving and teaching of such serious ethical problems are the functions only of those who have been fundamentally educated in the science of ethics, in contradistinction of the sophist.

Institutions are conducted under the name of hospital which, neither from the standpoint of ethics nor of scientific fitness, have a reason to exist. The body of suffering humanity seems often indeed to be viewed as a financial asset. This is manifest in the corrupt practice of fee-splitting and in those institutions which are more or less cleverly operated on a commercial basis. In a word, the innocence or weakness of human nature is being criminally commercialized both by individuals and institutions.

It is manifest that progress in the medical sciences, order in the regulation of the practice of medicine, and proper ethics in the medical world, must be dependent upon most careful discrimination in the selection of the student, and the strict application of educational principles to the medical course.

VAN NORMAN GOES TO THE WAR

First Assistant Superintendent at Johns Hopkins Retires to Enter British Military Service

Dr. Karl Van Norman, first assistant superintendent at The Johns Hopkins Hospital, has resigned his position to accept a commission in the British Army Medical Corps. He is to report at headquarters in London as soon as possible.

Dr. Van Norman is thirty-four years of age and unmarried. He obtained his education in Toronto and graduated from Toronto University, where he received both his academic and medical degrees. He afterwards served on the resident staff of the Toronto General Hospital. He then went to Pittsburgh, and for about three years was resident physician in charge of the hospital supported by the Pittsburgh Tuberculosis League. Having definitely chosen an administrative career, he resigned his position in Pittsburgh to accept the position of second assistant superintendent at the Johns Hopkins Hospital, which position he held for a year and a half, being promoted to the position of first assistant superintendent nearly a year and a half ago, following the death of Dr. Rupert Norton.

Dr. Van Norman's record has been a splendid one. He is a man of unusual ability and personal magnetism and is in every way fitted to make a high type of efficient hospital administrator. At the Johns Hopkins Hospital, where he had made very warm friends, his departure is looked upon with deepest regret. Dr. Van Norman saw his duty so clearly, however, that it would not have been proper to attempt to dissuade him from his purpose or to discourage him. With his training and experience in medical and administrative work, he should be a very valuable addition to the British Army Medical Corps. It is expected that he will be assigned to administrative duty where his services will be of the greatest value.

It matters not which army he has chosen to serve. That he has entered a service for the alleviation of suffering brought on by the war is sufficient reason that all of his colleagues among hospital administrators should join in wishing him Godspeed.

Dr. G. R. Wiseman, of Amherst, O., is president of a corporation formed to build a $25,000 hospital in that city.

CURRENT HOSPITAL LITERATURE

ALBERT ALLEMANN, M. D., Foreign Literature.
Army Medical Museum, Library, Office of the Surgeon General, United States Army.

The Scope and Limitations of a Psychiatric Clinic in San Francisco. Eva Charlotte Reid, M. D. Cal. State Jour. of Med., 1915, XIII, No. 10.

The absence of any facilities for treating mental cases in San Francisco and the limited amount of time given to the psychiatric clinic are cited as the main reasons for unsatisfactory results. The fact that without publicity 100 cases found their way to such a clinic in the first ten months of its existence leads the doctor to conclude that there is a rich field for active and fruitful work in this long-neglected field of preventive medicine.

A New Profession—The Social Welfare Worker. Murray Burnes Gordon, M. D. N. Y. Med. Jour., 1915, CII, No. 17.

Social service, or welfare work, is classified, for the purpose of demonstrating the extent to which the profession has grown, under three heads—municipal, institutional, and private. Dr. Gordon surveys the work of these three groups in detail to prove that the new profession of social worker has not only a legitimate field, but is a recognized necessity. He considers hospitals without a social service department as neither modern nor efficient.

Open-Air Summer Schools (Le scuole estive all' aperto). Tubercolosi, Milano, 1915, VII, No. 10.

The city of Genoa has at present three open-air schools for tuberculous children, all located in the neighborhood of the city. Besides receiving instruction the children get three meals a day. Each school has ample playgrounds. Two schools are near enough that the children can walk the distance to and from school. For the third school the children gather in the morning at a certain place, whence special street cars carry them to their destination and bring them back in the evening.

Treatment of Sewage in the Swiss Hospitals (Trattamento delle acque di fogna degli ospedali in Swizzera). Ospedale Maggiore, Milano, 1915, III, No. 7.

In the older hospitals of Switzerland the sewage is generally carried into the public streams without any attempt at purification, but in the new hospitals and especially in the isolation pavilions for contagious diseases, of which Switzerland possesses a great number, two types of sedimentation and purification of sewage are used. Where the sewage is not carried away by a public stream it collects first in a reservoir where sedimentation takes place. The liquids pass off into another reservoir and later are used for irrigation purposes. Disinfection is accomplished by mixing the disinfectant (chloride of lime) directly with the sewage in the sewer-pipe. Where canalization exists the sewage passes first into a sedimentation reservoir. The liquids are drawn off into a smaller reservoir, where they are disinfected and emptied into the canal, which carries them into a public stream.

Mesothorium in the Hospital. Zeitschr. f. Krankenanst., Leipzig, 1915, XI, No. 33.

The Board of Supervisors of All Saints Hospital at Breslau has recommended to the city authorities the purchase of 200 mg. mesothorium for the treatment of cancer patients. The price of mesothorium is considerably less than that of radium and the physicians have had a favorable experience with mesothorium in the treatment of cancer. Four tubes containing 50 milligrams each are to be purchased. It was found that this dose is sufficient for the treatment of cancer of the uterus, and as there is always a number of such patients at the hospital several patients can be treated at the same time.

State Protection of the Uniforms and Badges of Professional Nurses (Schutz van Berufstrachten und Berufsabzeichen für Krankenpflegegenossenschaften). Heilanstalt, Leipzig, 1915, X, No. 17.

Recently the German Reichstag has passed a law which prevents all persons from wearing nurses' uniforms or nurses' badges to which they are not entitled. During the present war a number of nurses' organizations have been formed who have their own uniforms and badges of distinction. It was chiefly to protect these organizations that the new law was passed. Any person wearing a nurse's uniform or mark of distinction renders himself liable to punishment. The execution of the law is left to the various states.

The Medical Staff, Intern and the Medical Profession. J. G. Cross, M. D. St. Paul Med. Jour., 1915, XVII, No. 10.

The relation of staff, intern and hospital are considered under four aspects: first, the care of the patient; second, the training of the intern for future practice; third, making the material and experience of hospital practice available for the profession at large; and fourth, the study of problems related to medicine and surgery by means of bedside clinics. The doctor's main appeal is that the work of the staff of a large charity hospital should benefit the profession at large, and that any physician entitled to information which the staff can furnish should be welcomed to the wards or the record room at all times.

A Chinese Autopsy. Alfred C. Reed. Boston Med. and Surg. Jour., 1915, CLXXIII, No. 16.

The Board of the Interior of the central government at Peking issued a proclamation in 1913, legalizing autopsies and post-mortem dissection for educational purposes. While this proclamation initiated post-mortems in the open ports such as Hankow, Shanghai, Canton, and also in Peking, the interior popular superstition and prejudice have thus far been proof against this governmental mandate. Dr. Reed writes a graphic account of the first autopsy in Hunan Province. This was performed on the 20th of August, 1915, at Changsha, the site of the Hunan-Yale College of Medicine and Hospital. A body was found on the street by the police, and, suspecting foul play, the commissioners requested a medical certificate of the cause of death from Dr. Yen, physician in charge of the Yale Hospital. A formal post-mortem was arranged for the following morning at the Municipal Poor House east of the city wall. Drs. Yen, Young and Reed arrived promptly at 8 o'clock at the Poor House, and after diligent inquiry found that the suspected victim of foul play had been buried the night before. "It was a mid-August morning and the sun beat down through helmet and umbrella as

only a Chinese sun can do. We held council on the grave and finally sent for a detachment of police and a crew of grave diggers. The body was exhumed, the heavy coffin laid across two granite tombstones, a thousand years old or more, which formed a convenient table. Police armed with bayoneted rifles formed a large circle. With punksticks burning about us and a coolie swinging a sprinkling can of disinfectant like a large censer, the work proceeded." Thus, says Dr. Reed, was established a precedent for autopsies in Hunan Province that will be of immense value to Hunan-Yale College and Hospital.

Female Nurses in the Division for Male Patients at the Royal Saxon Hospital for the Insane at Colditz (Ueber weibliche Pflege auf der Männerabteilung der Königl. Sächs. Heil- und Pflegeanstalt bei Colditz). Dr. Horsel. Zeitschr. f. d. ges. Neurol. u. Psychiat., Berlin, 1915, XXVII, No. 2.

A number of pavilions were set apart where only female nurses are employed. The patients were carefully selected as to their mental disease, character and tendencies. A head nurse supervises and controls all the nurses in all these buildings. The rooms of the nurses are well secured and separated from those of the patients. Only the best nurses of the female division were selected for the service in the division for male patients. The author reports that during the two years the new arrangement has been in force not the least trouble has arisen and that the results have been very satisfactory. There are nine hospitals for the insane in Germany which employ female nurses in the division for male patients. In twelve other hospitals female nurses are employed in the sick wards.

Floor and Wall Heating After the Old Roman System in the New Building for Surgical Diseases in the Military Hospital in Wiesbaden (Fussboden- und Wandheizung nach Art altrömischer Heizanlagen in dam Neubau eines Hauses für chirurgische Behandlung beim Lazarett in Wiesbaden). Gesundh.-Ingenieur, München, 1915, No. 8.

In this building the heating system of the ancient Romans was improved upon by the modern methods of heating. The source of heat (wood and charcoal fire) of the Romans was replaced by a low pressure steam heat apparatus, with spiral tubing. Under the tiled floor there is a hollow space of .95 meter in height, in which the air is heated by means of spiral tubes up to 50° C. The tiled walls are heated in a similar manner. The air, after being heated in the cellar, rises in a number of flat channels up into the walls, and after having given off its heat, returns to the furnace, without ever coming in contact with the air of the room. The loss of heat is limited by a cork covering of the stone wall. This heating system has proved comparatively economical. In moderate weather the floor-heating is sufficient, but in cold weather the walls must also be heated.

The Struggle with Tuberculosis in Venice (La lotta contro la tubercolosi in Venezia). Dr. R. Vivante. Tubercolosi, Milano, 1915, VII, No. 10.

During the last few years the city of Venice has established a number of special hospitals to prevent the increase of tuberculosis. In 1913 the Hospital Santa Maria delle Grazie, located on Sacca Sessola island, south of the city, was greatly enlarged. The hospital has now five large one-story pavilions, two for males, two for children and one for female patients. There is room for 230 patients in all.

Another institution was established on Giudecca island in 1906 for children of tuberculous parents by the Venetian Society for the Prevention of Tuberculosis. It consists of one large one-story pavilion and receives only children under school age. In 1909 the city established an anti-tubercular dispensary in the northern part of the city. This institution has accomplished much good, especially through its educational campaign among the poorer classes.

For tuberculous children in the school age the city established two open-air schools in 1913. One hundred and twenty children are taught in these schools, the city providing for two meals daily. The lessons last only three-quarters of an hour, and each is followed by long intermissions employed in play and gymnastic exercises.

Besides these institutions the city owns two mountain sanatoriums for tuberculous children in the Venetian Alps. About 225 children are sent to these places every year.

Origin of Three Dublin Hospitals. Ed. Boston Med. and Surg. Jour., 1915, CLXXIII, No. 15.

The three hospitals of Dublin referred to as having a "personality and distinction dependent on the circumstances of their origin" are the Rotunda Hospital, established in 1745 through the untiring energy and ingenuity of Dr. Bartholomew Mosse; the Stevens' Hospital at Kingsbridge, an institution founded by Richard Stevens and his sister Grizell in 1720, and Sir Patrick Dun's Hospital, opened for patients in 1808. Sir Patrick Dun, on his death in 1714, left his property to the Irish College of Physicians to establish a library and endow a professorship of medicine. His estate grew rapidly, and the accumulated income was sufficiently large in 1800 to establish the hospital that bears his name. The editor of the Boston *Medical and Surgical Journal* quotes the following from Dr. Patrick's admirable history of the Rotunda Hospital, to throw light on the remarkable character of its founder, Dr. Bartholomew Mosse:

"In August, 1748, he took upon himself the responsibility of a lease, for three generations, of four acres and one rood of land on the north side of Great Britain street, whereon to erect a lying-in hospital for at least 150 patients. He first laid out the grounds as public gardens, after the model of the Vauxhall Gardens, London, upon which he expended some £2,000 of his own money, walling in the grounds, erecting an orchestra room, concert room and coffee room, and planting trees and shrubs. Here he organized a series of entertainments with a view to producing a yearly income for the benefit of his charity. His expectations were not disappointed, and, in fact, to this day the hospital still draws a considerable income from the entertainment rooms and pleasure grounds established by him.

"The foundation-stone of the new hospital was laid on July 9, 1751. In December, 1756, a Royal Charter was granted. Mosse was appointed Master for life, and shortly afterwards a parliamentary grant of £6,000 was paid over to the governors, less £180 deducted at the treasury in certain imposts.

"Nearly a year later a committee of the Irish House of Commons gave a further grant of £6,000 for the completion of the hospital, and a benefaction of £2,000 to 'Bartholomew Mosse, Master of the said Hospital, as a reward for his great Care and Diligence in Attending the Lying-in Hospital in George's-Lane, thirteen years, and superintending the new Hospital in Great Britain-Street nine years and a half, by which he hath greatly injured himself in his profession, and hurt his Family in their Circumstances, having never received any reward.' Thus, after the overcoming of stupendous difficulties the New Hospital, from designs by the great contemporary architect, Richard Castle, was opened on Dec. 8, 1757, 12½ years after the establishment, as a private venture, of the original hospital in George's-Lane. At the time of the transfer from the old to the new hospital Mosse was able to report that 3,975 women had been delivered in the old hospital, with a maternal mortality of 1.10 per cent, 'mostly of fever several days after they were safely delivered,' at a total cost of £3,913, 13s, ¾d."

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DEPARTMENT OF NURSING

MARY M. RIDDLE, R. N., Editor,
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The Nurse in Surgical Service

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General hospitals are so largely dependent on the success of their surgical service that I believe that any suggestion which will tend to help in the teaching of nurses for this service will not be unwelcome to the readers of THE MODERN HOSPITAL. A preliminary teaching of the nurse before she has her operating room work will result in a saving of time, in the economic use of material, and will also be of value to the operating surgeon, the hospital, and the nurse herself.

The nurse who is ambitious, and who keeps progressing in the wide field open for nurses today, may find herself in many places before the end of her professional life, and the wider the field over which she moves, the more will she realize the necessity of a uniform method of surgical service—a simple technic, one that can produce results with the smallest amount of time, labor and material.

It has been my experience, and I think the experience of many others, that although there have been many good text-books written on "Surgical Nursing and Technic" for nurses, it is rather difficult to map out a schedule for the classes usually given in the curriculum to this subject—one that will be practical, and that will cover the fundamental knowledge necessary for the nurse to have in order to assist intelligently in the operating room, and in the preparation and after-care of surgical patients.

A well-known actor once said, "The only school of acting is the stage itself," and I suppose that a nurse never really learns asepsis until she comes into her surgical service; but we know that anything which means so much to the results of surgery on the human body, and work that comes so close to the dividing line between life and death, should be removed as far as possible from the danger of experimentation.

I have heard nurses say, not once, but many times, "I never saw a piece of catgut until I went into the operating room"; or "Please tell me the names of some of these instruments; I never saw anything but the dressing instruments before I came up here."

I know that the larger teaching hospitals are carrying on a wonderful educational work, and have better methods for teaching of their nurses than anything I could suggest, but I thought perhaps the little plan I have worked out for my own classes might be of value to some who are wondering about the best way to prepare their nurses to give good surgical service. It has been fairly well proven that a class in surgical nursing and technic will produce better results in the latter half of the intermediate year.

CLASS OUTLINE

1. Asepsis, Antisepsis, Sterilization, Fumigation, An Aseptic Conscience, Technic, Ethics of the Operating Room.
2. General Preparation:
   - Baths,
   - Diet,
   - Catharsis,
   - Enemata and douches,
   - Records of examinations and analyses,
   - Rest,
   - Suggestion and encouragement.
3, 4, 5. Preparation for the following cases:
   - Abdominal,
   - Vaginal,
   - Rectal,
   - Screen,
   - Eye, ear, nose, and throat,
   - Face and head,
   - Breast,
   - Amputations,
   - Bone graft and plating,
   - Fractures and dislocations,
   - Cæsarean section,
   - Orthopedic surgery,
   - Plaster casts,
   - Salvarsan,
   - Cystoscopic examinations and x-ray examinations and treatment.
6. Solutions—preparation and use:
   - Stock,
   - Reduction to required percentage.
7. Handling of sterile material:
   1. Tables,
   2. Basins, pans, pitchers, etc.,
   3. Irrigators,
   4. Steel drums,
   5. Jars,
   6. Water,
   7. Solutions,
   8. Linen,
   9. Packages.
8. Dressings:
   - Gauze—cut from bolt,
   - Grades—usage,
   - Wash gauze,
   - Gauze,
   - Folded sponges,
   - Lap sponges or towels,
   - Throat sponges,
   - Continuous sponges,
   - Packing,
   - Pads—
     - Abdominal,
     - Perineal,
     - Cord dressings,
     - Eye pads,
     - Involuntary.
   - Cotton:
     - Rolls,
     - Grades—1st, 2d, waste, non-absorbent,
     - Eye sponges,
     - Tampons,
   - Bandages:
9. Gloves, Sutures, Packing, Drainage, etc.:
   - Catgut:
     - Plain,
     - Iodized,
     - Chromic.
   - Kangaroo tendon:
     - Silk,
     - Silkworm,
     - Linen,
     - Horsehair,
     - Guttapercha,
     - Gauze packings,
     - Tubing—glass and rubber,
     - Applicators,
     - Rubber gloves.
10. Instruments:
    - Names and usage,
    - Care and cleaning,
    - Loss of instruments or parts.

    Needles:
    - Surgical, hypo, saline and aspirating.

    Syringes,
    Knives, scissors, razors,
    Hollow instruments,
    Eye, ear, nose and throat instruments,
    Cauteries—actual, Paquin, electric.
11. Preparation for anesthetic, and protection of patient under anesthetic, or in shock.

    Anesthetic Table:
    - Stethoscope,
    - Emesis basin,
    - Gauze swipes,
    - Towels,
    - Safety pins,
    - Hypo tray,
    - Mouth gag,
    - Tongue forceps,
    - Ether,
    - Mask,
    - Corks,
    - Vaseline.

    Hypodermics:
    - Strychnine,
    - Camphor in oil,
    - Ether,
    - Brandy,
    - Ergone,
    - Adrenalin,
    - Pituitrin,
    - Scopolamin { c morphia, c narcophin.

    Trendelenburg position:
    - Oxygen,
    - Heat,
    - Artificial respiration—mechanical, pulmotor, etc.,
    - Saline—subcutaneous, per rectum, intravenous.

12. Emergency service:
    Utensils, drugs, dressings and instruments, always to be ready.
    Removal and proper listing of clothing,
    Information of accident and history of patient,
    Shock and hemorrhage,
    *Asphyxiation,
    *Poisoning,
    *Heat prostration,
    Injuries—head, extremities, body,
    *Alcoholism.
13. Record:
    Name and location of patient,
    Operation (correct name and detail),
    Emergency,
    Other surgical treatment,
    Amount and kind of anesthesia,
    Time of operation and anesthetic,
    Just what involved in liability cases,
    Surgeon, assistants, anesthetist, nurses,
    Packing, bone plates, foreign bodies, drainage,
    Sponge count,
    Condition—pulse, respiration,
    Preservation of specimens,
    Report of any unusual phase of case.
14. Sanitation of the Operating Rooms:
    Housekeeping and order,
    Fumigation and disinfection,
    Light, air and heat,
    Deodorants,
    Disposal of linen, drainage, specimens, and amputated parts.
15. Technic of the clean nurse.
    Technic of the general nurse.
16, 17. Post-operative care:
    Gynecological,
    Eye, ear, nose and throat,
    General surgery.
18. Operating in a home:
    1. The room,
    2. The patient,
    3. The family.
    Sterile materials from hospital,
    Simplest possible technic,
    The oven, the washboiler, the teakettle.

*Although not properly belonging under surgical nursing, these emergencies frequently are admitted directly to emergency room of operating suites in hospitals.

Unprofessional Meddlers

The following is quoted from an editorial in a recent number of the South African Nursing Record, urging legal protection of uniform:

"The war has taught us more than anything the great necessity for some such protection, for we have seen over and over again women—many of them of the highest social position, many of them also of the very lowest—who have not scrupled to masquerade in nurse's uniform, and newspapers which have not scrupled to describe them as 'chic' and 'very fetching'! That sort of thing sickens the legitimate profession. It is an insult to the outward and visible sign of an essentially noble calling. Granted that these women have every legal right to do it, they have no moral right to masquerade as what they are not, to don an apparel that is recognized by custom as the uniform of a splendid profession, and to pose in modifications of it because it is becoming. We hope that the War Office has been so sickened by unprofessional meddlers that protection of the nurse's profession, her name, and her uniform will soon be an accomplished fact."

BOOKS FOR THE HOSPITAL LIBRARY

Some Good Fiction, History and Autobiography to Make Convalescence Easier and Happier

Some of the books which were issued during July, August, September and October of this year, and which can be recommended for the hospital library, are as follows:

Bronson Alcott's Fruitlands, by C. E. Sears, is a very entertaining account of the Alcott family in one phase of their life. *The Spell of Flanders*, by E. N. Vose ($2.25), is a timely memorial of the beautiful land now laid waste by war; the numerous illustrations are very good. An interesting autobiography is that of *Tahan* (known as the Rev. J. K. Griffis), an Indian half-breed. Baynes' *Wild Bird Guests* tells of ways of attracting and taming the birds. In *Time o' Day*, by D. E. Jones, the scene shifts to Australia; this is one of the novels one recommends with reservations, for not everyone will care for it. *The Primrose Ring*, by Ruth Sawyer, is one of the pretty, little stories—a hospital story.

The Secrets of the Hohenzollerns, by the author of *Secrets of the German War-office*, gives one more thrills than any novel of Oppenheim, and if you are on the side of the Allies you will enjoy *Punch's Cartoons of the Great War*. James Lane Allen's *Sword of Youth* is a little tale of the Civil War; in *Penelope's Postscripts* we have some more of Mrs. Wiggin's delightful bits of travel; Mrs. Rinehart's *K* is another hospital novel. In *The Money Master*, Sir Gilbert Parker returns to French Canada and the habitant. *Some Women and Timothy* is very enjoyable, telling of the entanglement of good-natured Timothy while trying to straighten out his brother's affairs. A. G. Gardiner gives some brief biographical sketches of the men of the hour in *The War Lords*, and another very interesting biography is that of Dr. Anna Shaw, in *The Story of a Pioneer*. Most of us are much disappointed in *Michael O'Halloran*, Mrs. Gene Stratton-Porter's new book, but it must be confessed her heroes are rather on the "unco' guid" order. Another book of the war is Owen Wister's *The Pentecost of Calamity*, an arraignment of German militarism.

A book to chuckle over is Arthur Guiterman's *The Laughing Muse*, and Galsworthy's *The Freelands* deserves more than a passing comment. Frances Sterrett's *Up the Road With Sally* will while away an idle hour quite pleasantly, and *Little Miss Grouch* is simply delightful. *Felix O'Day*, F. Hopkinson Smith's last book, of old New York, and Mrs. Humphrey Ward's *Eltham House* are thoroughly good novels, and, with *The Freelands* and *The Turmoil* are decidedly the best of the year. Judge Grant's *The High Priestess* belongs with these more thoughtful books, but will not be so well liked because his heroine, a not uncommon type of the terribly efficient "new woman," is so disagreeable.

Letters on an Elk Hunt carries on the narrative of Mrs. Stewart's *Letters of a Woman Homesteader*, which everyone enjoyed so much, and in *Around Old Chester* Mrs. Deland has collected some old tales and told a few new ones of Dr. Lavender and his people. *The Old Order Changeth* is the sequel to Archibald Marshall's other Clinton stories, and is as thoroughly delightful. Two ranching stories are Arthur Stringer's *The Prairie Wife* and B. M. Bower's *Jean of the Lazy A*—this last a tale of the "movies" in action. Bertha Runkle has written a very readable novel in *Straight Down the Crooked Lane*.

Three very readable stories are Stackpoole's *The Pearl Fishers*, L. J. Vance's *Nobody*, and Randall Parrish's *Beyond the Frontier*. With the exception of the rattlesnake chapter, not good for nervous people, Vachell's *Spragge's Canyon* might be included with these. In *The Lost Prince* Mrs. Burnett has written a modern fairy tale.

Three volumes, which are rather local in their interest and rather more expensive than the ordinary hospital library may care to buy, but which are well worth while, are *Old Concord*, by Allen French ($2.70); *Old Boston Museum Days*, by Kate Ryan ($1.35); and Florence Converse's *The Story of Wellesley* ($1.80). To these should be added the new *Life of John Hay* (2 vols., $5.00) and *The Heart of Europe*, by Ralph Adams Cram ($2.50). Also Mildred Aldrich's letters telling of the battle of the Marne, first published in the *Atlantic* and now issued in book form under the title *A Hill-top on the Marne*.

E. KATHLEEN JONES,
Librarian McLean Hospital, Waverley, Mass.

FOREIGN CORRESPONDENCE

THE FIRST AUTOPSY IN CHANGSHA, CHINA[1]

In Spite of Ages-old Superstitions the Chinese People Accept Western Medicine Gratefully—The Ceremonies of a Post-mortem

It may be of interest to readers of THE MODERN HOSPITAL to hear a word about the first official autopsy ever performed in this section of the interior of China.

According to the teaching of the great sage Confucius, "A filial son should be careful to keep his body in good health and every member should be intact." A story was told about a general whose eye was accidentally shot by an arrow. He pulled the arrow out and the eye came with it. Immediately he swallowed the eye and threw the arrow away. When asked why he swallowed the useless eye he said, "That was a part of my anatomy and it is only right that I should have it, even though it is useless, in order to be obedient to my parents." Filial affection, obedience and superstition have been a great drawback to the progress of western medical education and practice.

A man died a couple of hours after he was picked up on the street in Changsha, August 19, 1915. As no relative or friend could be found immediately, the police took hold of the case. A deputy from the health department waited on Dr. Yen, physician in charge of the Hunan-Yale hospital and requested a medical certificate of the cause of death. A formal post-mortem examination was quickly arranged for the next day at the Municipal Poor House.

The following morning three of the Hunan-Yale hospital staff met at an appointed time and proceeded to the Poor House outside of the North-East Gate of the city with the deputy from the health department. He was armed with a copy of the proclamation issued by the police commissioner, stating that in order to safeguard the public from epidemic and to uncover foul play or otherwise, an autopsy was necessary to determine the cause of his sudden death.

On arriving at the Poor House we found that the body had been taken to the cemetery upon the hill back of the institution, where it had been buried the night before. Thither we went with a guide. After tramping around a while we came upon a mound covered with fresh earth. We did not waste any more time in looking around, but camped there and sent for some coolies. Pretty soon four or five coolies appeared with pick and spade, baskets, pail of water and a sprinkler full of disinfecting fluid. In a little while appeared again six policemen with bayoneted rifles and an officer. We thought surely the autopsy would have to be abandoned right there with the coffin uncovered. On learning our mission of peace, however, the police allowed the work to proceed. Before the body was removed one of the coolies, with the sprinkler in his hand, began to pour the disinfecting fluid around the coffin, the policemen forming a large circle around us. After securing extensive specimens the body was re-interred and the coffin sealed by the deputy from the Yamen, or Court, indicating that it had been opened officially.

Judging from the extensive congestion of the internal organs death probably was due to heat stroke superimposed upon an extremely fatty degeneration of the liver.

The deputy from the health department made a short speech, explaining the importance of determining the cause of death in such cases. Dr. Yen followed with a statement of the need of such work for medical education.

During the past ten years in which western medicine has been practiced in this province of Hunan, it has made wonderful progress in the way of enlisting the patronage of the people. The fact that the first autopsy was made possible in a conservative city like Changsha marks a great awakening on the part of the officials, and a willingness to advance the cause of scientific research.

E. B. YOUNG, M. D.,
Changsha-Yale Hospital.

[1]Dr. Young is a Chinese, born and educated in Honolulu, a graduate in medicine from the Detroit College of Medicine; he served his internship in Grace Hospital and was for several years chief resident under Dr. Babcock.

HOSPITAL SERVICE IN CHIENGMAI

People of North Siam Do Not Take Kindly to Western Medicine, but Are Being Converted to Hospital Patronage

Chiengmai, the metropolis of North Siam, is at the very ends of the earth, being 180 degrees of longitude east of Washington, D. C.

The journey to Siam is made either by the eastern route, via the Mediterranean, Suez and India, or by the western route, via Japan, the Philippines and Hong Kong, there being but slight difference in either time or expense between the two routes. Bangkok, the capital of Siam, is reached in six or seven weeks' travel. The journey from Bangkok to Chiengmai requires another six or eight weeks, inasmuch as the only means of travel is by river boats. The boats are manned by half-naked, strong-limbed men, who, with setting-poles, propel the boat some six or seven hundred miles up the swift Maping river, ascending a series of forty rapids and traversing long stretches of jungle, the home of wild elephant, rhinoceros, bear, Bengal tiger and other large game. Very soon, however, this latter half of the journey will be eliminated by the advent of the railway.

Although western medicines were brought to North Siam by American missionaries some forty-eight years ago, it is only within the past thirty years that hospital work has had its beginning. And even after thirty years of effort we may say that the need of hospitals is only beginning to be appreciated by the people. So that in any mention of hospital work in North Siam, one can recount only the laying of foundations, the preliminary work of creating or developing a sense of the need of such an institution.

A recent editorial in THE MODERN HOSPITAL says, "We know now that a hospital is not a thing within four walls, but that it is a part of the life and welfare of the whole community; that we cannot hope to be of wide usefulness without an intimate touch with the homes of the people to be benefited." Although the hospital work of North Siam has been done very largely outside the four walls, inasmuch as it was impossible to reach any considerable portion of the sick in any other way, yet it has been of exceeding value, not only in its immediate results, but also in preparing the way for the more extensive hospital work in the future.

The people of North Siam are literate and well versed

Fig. 1. Vaccinating staff of Chiengmai Hospital. A staff of more than 100 trained men has carried vaccine to the people throughout the villages and country districts over a wide area. Smallpox has practically disappeared throughout the region covered by their work.

in the simpler arts of civilization. They are self-reliant folk, independent, non-aggressive and conservative to a marked degree. Although for centuries past infant mortality has maintained a very high rate, and epidemics of dysentery, small-pox and malignant malaria were wont to decimate whole villages and sections of the country, yet there was no joyful welcoming of the foreign medicine on its first introduction by Dr. McGilvary, the pioneer missionary.

So firm was the belief in evil spirits as the cause of disease and the consequent necessity of spirit charms and offerings for its alleviation, that the people were quite unwilling to accept foreign medicines. Dr. McGilvary at times bribed the sick to take quinine in order that its efficacy in malaria might be proved. By slow degrees this precious life-saving remedy fought its way into general recognition until at the present time the Siamese Government is attempting to put quinine, at a low price, within the reach of the entire country, including even the rural population.

Smallpox has ever claimed a heavy toll in Siam. In the North epidemics were wont to sweep across the country, destroying large numbers of the people, especially infants, the aged and the infirm, and leaving in their wake many blind and disfigured people. The following quotations are from a recent government publication on "Smallpox and Vaccination and the New Vaccination Law in Siam":

"In January, 1840, the first active vaccine scabs were brought to Siam by an American missionary. * * * It was not until the year 1904 that the Siamese government undertook the preparation of calf lymph in Bangkok."

The naiveté of these statements expresses most vividly the extreme conservatism of this land. Although American missionaries had carried on an active vaccination propaganda and had practically driven smallpox out of those regions covered by their operations, sixty-four years elapsed before the government took measures looking to widespread vaccination. In 1914 a compulsory vaccination law was enacted. This rendered unnecessary the vaccine laboratory operated in connection with the Chiengmai Hospital. During the nine years of its existence 495 calves were vaccinated, 800,000 doses of vaccine were produced,

Fig. 2. Chiengmai Leper Asylum. Visitors' day. Guests inspecting the water tower and cottages.

Fig. 3. Group of lepers at the Chiengmai Leper Asylum. There are 180 lepers at the asylum. The support of an adult leper costs $25 per year.

and some 200,000 persons were vaccinated by our staff of more than 100 trained men.

Militating against the willingness of the people to accept hospital treatment may be mentioned their gregariousness and their extreme love of home and family. Being a primitive people, they cannot conceive of better surroundings for a sick person than his own home, however mean and unsanitary it may be. So extremely loth are they to leave home when ill that it is well-nigh impossible to persuade them to seek hospital treatment in any acute illness. For this reason hospital patients are largely confined to diseases of a chronic nature. Notable among the ailments that seek relief are cases of vesical calculus. And yet in spite of the extreme suffering of this malady (the most extreme in the whole range of human experience) these patients usually do not come to us until years of suffering have worn out the endurance of even the stoical Siamese. In one instance a calculus weighing more than eight ounces was removed from a man fifty years of age. Language fails to convey in an adequate manner the agonies experienced by this sufferer during the eighteen years previous to the relief he finally found in the mission hospital. And yet, strange to say, other cases of stone in this man's neighborhood delayed long in applying for the relief which they were assured could be had in the hospital. The Western mind does not understand such stubborn conservatism.

As showing another characteristic of this people there might be mentioned the case of an official in a distant province who for years had been a great sufferer from vesical calculus. Having heard that relief was to be obtained in the hospital, he set out on a journey of some 300 miles to go to Chiengmai. On account of the mountainous roads there were but three methods of travel possible; travel by elephant, by pony or by sedan chair. The first two were found to be intolerable on account of his pain. His journey was greatly protracted. For weeks at a time he was obliged to desist from travel on account of great pain. Once he was beset by dacoits at night. A part of his money and all of his guns were stolen. When he finally reached the hospital, twelve months after leaving home, he was penniless and of course still suffering intensely. He was received into the hospital and was wholly relieved by an operation. A more grateful patient one rarely sees.

Vesical calculus is a common malady. For twenty-six years past the average number of operations in the Chiengmai hospital has been about 45 per annum. Of these approximately 98 percent are in males. In former years our cases were almost wholly adults, but at present the larger proportion is among children.

While malaria in its protean manifestations, ankylostomiasis and tuberculosis are very prevalent, those suffering from these diseases rarely come to the hospital.

Venereal diseases, which make up a considerable proportion of the hospital cases, are of recent introduction and obtain only in the towns, the great mass of the rural population being yet entirely free.

Surgery is limited largely to vesical calculus and lapa-

Fig. 4. Chiengmai Leper Asylum. Cremation is practiced and is the most satisfactory manner of disposing of the bodies of those who die from leprosy.

rotomy. Accident surgical cases are extremely rare; malignant tumors usually do not come to the hospital until they have passed beyond the stage where surgical help is possible. Amebic and bacillary dysentery are indigenous, and liver abscess, while uncommon, is met at times.

Our hospital of fifty beds furnishes the only modern refuge for the sick in a very wide area. It may be said that of the vast amount of medical work done during the past 48 years, totaling more than 100,000 attendances in 1914, that done in the five hospitals of the mission has been the least prominent and perhaps the least important. Nevertheless all of the outside work has a direct bearing upon the future of hospitals, inasmuch as it is educating the people and is slowly overcoming their ultra-conservatism in matters medical. Once convinced of the genuine superiority and desirability of any plan or procedure, no people more heartily give their confidence and endorsement than these same people of North Siam. Slow in forming their conclusions, when once formed, they become all but immovably fixed in their allegiance.

In view of the long preliminary medical work that has been done, the growing acceptance of foreign manners and foreign commodities, the profound influence of Christianity in breaking down superstition, the growing enlightenment due to educational work in government and in mission schools, there is a bright future for hospital work. Already there is a growing readiness to seek hospital treatment and there can be no doubt that within a very few decades there will be a large and ever-growing demand for hospitals and for Siamese physicians and surgeons trained in all the arts of western medicine.

J. W. McKean, M. D.,
Superintendent Chiengmai Hospital and Dispensary.
Chiengmai, Siam, 20 July, 1915.

Hospital Happenings in Pennsylvania

DR. MILLS LEAVES UNIVERSITY OF PENNSYLVANIA

Dr. Charles K. Mills, the famous neurologist, who has been connected with the University of Pennsylvania Hospital for so many years, has resigned his chair in the Medical School of the University, with the announcement that he will devote his entire attention hereafter to post-graduate teaching, research work and private interests.

TYPHOID FEVER EPIDEMIC

The slight epidemic of typhoid fever mentioned in the last letter has now abated, and the whole Health Department has been busily investigating the source of each individual case. According to Dr. Ziegler, Director of Health, investigation has shown that of the 211 cases of typhoid fever reported in this city since August 1, 46 were imported vacation cases and 14 were persons transferred from other towns. Of the remainder, 15 were infected by contact, 3 by bathing in the Schuylkill River, 3 by drinking raw water from the Delaware River, and one by impure milk. Not a single case could be traced to the city's filtered water supply.

A NEW PENNSYLVANIA HOSPITAL

At 12 o'clock noon, September 29, 1915, the cornerstone of the Philadelphia Freemasons' Memorial Hospital, at Elizabethtown, Pennsylvania, was laid by Grand Master J. Henry Williams. This hospital is being erected as a memorial by the Freemasons of Philadelphia, the funds for which were collected by voluntary contributions from the members of the various lodges in Philadelphia.

The plans contemplate the erection of 5 buildings, 4 to be similar to the first unit now under construction, and to be used for patients, and the central building will be used for administration purposes, with a complete operating suite on the top floor.

All the buildings will be connected by means of wide corridors on each floor, and every provision will be made to conform to the standard of modern hospitals. Each of the 4 units will be 36 feet by 100 feet and 3 stories high, with 4 solariums, each of about 300 square feet, and each building will have a capacity for about 40 beds. The ground floor will contain isolation rooms, drug rooms, toilets, store rooms, kitchen, dining room, heater room and bed rooms. The first floor will contain bed rooms, diet kitchen, linen rooms, toilet rooms, and solariums. The second floor will contain bed rooms, toilets, linen rooms, diet kitchen, solariums and an operating suite. There will be a large loft above the second floor.

The building will face southeast, thereby insuring sunlight in every window some time during the day, and the location selected gives a fine view of the surrounding country and Grand Lodge Hall.

The building will be of fireproof construction, and the exterior walls will be faced with Holmesburg granite with Indiana limestone trimmings. It will have a slate roof, to harmonize with the other buildings on the property.

The architects are Messrs. Guy King and Edgar Wightman.

BEQUESTS

The will of the late Mary Meredith, among other public bequests, contained one of $250 to the Children's Homeopathic Hospital.

The late Samuel Dickson bequeathed $50,000 to the William Pepper Clinical Laboratory of Medicine of the University of Pennsylvania.

The Woman's Medical College of Philadelphia has recently received $10,000 from the estate of the late Elizabeth Shippen.

The late Dr. Eugene I. Santee bequeathed $5,000 to the Aid Association of the Philadelphia County Medical Society.

The Presbyterian Hospital received a bequest of $5,000 under the will of the late Thebe A. Brown.

The Jefferson Hospital receives $15,000 as a contingent bequest under the will of the late Annie M. Wilson.

The German Hospital receives $4,300 by bequest of the late Elizabeth M. D. Prince; also $2,000 from the estate of the late Henry Schefer.

Among the public bequests contained in the will of the late Thomas McElmell were those of $5,000 each to St. Agnes and St. Joseph's Hospitals, and a contingent bequest of $50,000 and upwards to St. Mary's, St. Joseph's and St. Agnes' Hospitals.

The Woman's Southern Homeopathic Hospital, of Philadelphia, Pa., graduated a class of eight nurses in October. The commencement exercises were very fine and the reception in the Nurses' Home was a delightful occasion. This is one of the best small training schools in the state.

NEW CHILDREN'S HOSPITAL

A campaign to raise funds for the proposed $500,000 second unit of the new hospital closed on October 31. A banquet ended the campaign, at which $350,000 was subscribed, and it is announced that the other $150,000 is in sight. An exciting feature of the banquet was the raising of $110,000 in ten minutes, in small and large amounts.

The campaign committee was:

E. T. Stotesbury, general chairman.
Benjamin Rush, general vice-chairman.
Arthur H. Lea, executive committee.
Dr. William H. Walsh, general secretary.

Wm. H. Walsh.

Health Insurance and Hospitals

The publication of a draft of an act for universal health insurance, by the American Association for Labor Legislation, has given this movement a new impetus. Although the draft and the accompanying explanatory material represent three years' study by many of the country's experts, the draft is presented in tentative form to elicit discussion and constructive criticism from interested parties. Upon the basis of the criticism received the Association hopes to prepare a complete bill, which will be introduced into the legislatures of 1916.

The present draft provides that all manual workers and others earning less than $100 a month shall be insured, and that each insured worker will receive a physician's treatment, hospital and nursing care, in addition to medical and surgical supplies, and a cash benefit for a maximum of twenty-six weeks of sickness, each weekly payment being equal to two-thirds of the wages. The wife of the insured man will have special care at childbirth and, if she is also insured, a special cash benefit equal to eight weeks' sick benefit. Furthermore, the act offers medical care to the family and funeral benefit for the insured.

Of special interest to the readers of THE MODERN HOSPITAL are the provisions for hospital care. The bill provides that hospital or sanatorium treatment may be substituted for the other forms of medical service, with the consent of the insured or his family. Where hospital treatment is imperative, the insurance associations may require this and may suspend cash payments during the refusal of the insured to enter a hospital. If the insured has members of his family dependent upon him, a special benefit equal to one-half of the sick benefit is paid to them while the patient is in the hospital. Hospital care may not be furnished for more than six months and is to be provided in hospitals with which the insurance associations have made financial arrangements, or in institutions maintained by the associations themselves.

With this exception, the machinery for administering the medical care has not yet been outlined, because the Association believes that this can be framed best from suggestions received from the medical profession.

Now is the time to present criticisms. Copies of the bill and explanatory literature may be had by addressing the Association at 131 East 23d street, New York City.

PHILANTHROPY AND THE PUBLIC HEALTH

THE NEW YORK ASSOCIATION FOR IMPROVING THE CONDITION OF THE POOR.
BAILEY B. BURRITT, General Director.
WILLIAM H. MATTHEWS, Director,
Department of Family Welfare.
DONALD B. ARMSTRONG, M. D., Director,
Department of Social Welfare.

A Nuremburg of the Unemployable

BY HOLLAND HUDSON

This is the story of the most unique toy-shop in the world, where old and crippled men are given employment making charming and inexpensive toys. The story includes a suggestion for Christmas benefactions to children in New York City.

One of the most difficult problems which confronted the Mayor's Committee on Unemployment in New York City last year was the task of finding work for men whom age, accidents, and illness had rendered ineligible for heavy tasks, but who were willing and eager to do any work within their strength to earn their living and retain their self-respect. Especially this problem challenged the interest of Miss C. S. Foster—so much that she set her keen woman's wit at work to solve it. And she did solve it.

The mad war which has plunged the whole world into unhappiness has struck even at the happiness of children by shutting off completely the supply of imported toys. American tradesmen have tried to fill the breach with wonderfully realistic dolls, with ingenious mechanical playthings, but they have failed to produce toys that children love as they love the wooden products of old Nuremburg. The American doll is too perfect, it lacks the faults for which one is loved; the American toy leaves nothing

FIG. 1. THE MAIN WORK-ROOM

Fig. 2. Cutting out the toys.

to the imagination, that especial suzerainty of childhood.

Miss Foster has solved her unemployment problem by setting the old and crippled men to work at the manufacture of lovable toys—handsomer and more American products than the contents of the old Noah's arks—but just as quaint. The toy-shop means to the men employed a steady job at which they can earn a living; to parents and lovers of children it means a fresh supply of welcome gifts at reasonable prices; to children it means lovely St. Bernard dogs on wooden wheels, pussy-cats in black and white, tortoise shell or Maltese coloring, with their backs magnificently arched, bears and tigers and dicky-birds, and a whole farmyard of familiar animals.

Bishop Greer, of the Episcopal diocese of New York City, was the first to give Miss Foster's plan substantial aid by allowing her the use of almost the entire diocesan house, made famous by the late Bishop Potter, as a toy-shop. Miss Foster began with about twenty men. In a short time the number doubled and tripled and is still growing.

Anticipating continued expansion and recognizing the community value of the toy-shop, the New York Association for Improving the Condition of the Poor has absorbed it as one of its manifold activities, retaining Miss Foster as manager.

The men who make the toys are as interesting as the toys they make. They have been sailors, farmers, carpenters, and machinists; most of the trades are represented. Today they are too old, or too handicapped physically to qualify in their old occupations. One of the illustrations shows a machinist, deprived of one eye in an industrial accident, cutting out two dimensional animals with a foot saw. The animals are painted by a skilled draftsman, whom failing eyesight has deprived of his old occupation. There are several pairs of crutches in the shop.

When I visited the shop to take photographs, reproduced with this article, I was prepared to placate some fussy old men who didn't want their pictures taken. I found, instead, the most cheerful and harmonious group of craftsmen I have ever met. They were interested in the toys and their destination, and most of all in the fortunes of the toy-shop. Here is a work-room that needs no stereotyped placard instructing the employees to smile; the smiles grow out of the opportunity to work; they go into the toys as they are cut out and painted, and I know they reappear on the faces of the children who get the toys.

This Christmas the Association for Improving the Condition of the Poor offers a new avenue of Christmas giving through the toy-shop; it proposes to those who send children's gifts to hospitals and poor homes that they send toys from the toy-shop, thus helping to provide work for these men while at the same time giving pleasure to the children. The toys cost from twenty-five cents to a dollar each. The fifty-cent toys are in the greatest variety and no less attractive to the child's eye than the larger ones. The suggestion of the Association is that those who wish to play Santa Claus for the poor and sick children

Fig. 3. The painter.

Fig. 4. A venerable craftsman.

Fig. 5. Where toys are sawed out and painted.

shall multiply fifty cents by the number of little folks they wish to befriend, send the amount to Mr. George Blagden, treasurer, at 105 East Twenty-second street, and give instructions for the toys to be delivered at the shop to the representatives of the hospital or institution for the Christmas stockings. This is what the A. I. C. P. means when it says that "every dollar does a double duty when spent for toys from the 'Old Men's Toy-Shop.'"

PRAISE FOR RETIRING SUPERINTENDENT

Mrs. Hertzler, Eleven Years Superintendent of Kansas Institution, Quits Hospital Work

Mrs. Edith D. Hertzler, R. N., for eleven years superintendent of the Halstead Hospital, Halstead, Kansas, has retired to private life. This is a slight tribute from one who knew of her work, to the untiring, ceaseless devotion of a superintendent to an ideal.

It is no small mark of the ability of the retiring superintendent that during her management of the institution the original building and grounds were purchased from the Mennonite Charity Association, an incorporated training school for nurses established, and a modern fireproof hospital building erected.

As the head of the training school, Mrs. Hertzler was devoted, not only to the highest professional interests of the nurses in training, but she also gave much thought to creating a home atmosphere, so generally lacking in institutional life. Recreation for the nurses not infrequently took the form of trips under the chaperonage of the superintendent to neighboring cities to witness good plays or opera. Often at the noon hour she would read aloud from some good book, and it was her constant endeavor to direct conversation away from professional topics, the bane of hospital life.

Mrs. Hertzler is the wife of Dr. Arthur E. Hertzler, of Kansas City, Mo., and Halstead Kas. In addition to her duties as superintendent of the hospital, Mrs. Hertzler has devoted much time to assisting her husband in his researches. "To My Wife," the dedication of a treatise on tumors by the doctor, bears testimony of the truly helpmeet qualities of Mrs. Hertzler.

Mrs. Hertzler is a member of the American Hospital Association.

DR. WAYNE SMITH PASSES AWAY

Superintendent of Harper Hospital, Detroit, Succumbs to Cerebral Hemorrhage at the Early Age of Thirty-Nine Years—A Splendid Administrator Gone

Dr. Oswald Wayne Smith, for the past two years superintendent of Harper Hospital, Detroit, died at his home in that city on Friday, November 12, of apoplexy. He had been well and strong until a few days before his death, when he was found unconscious and suffering, according to the physicians, from a cerebral hemorrhage. He rallied shortly after the attack, but undoubtedly the hemorrhage continued and he relapsed again and was unconscious to the end.

Dr. Smith was thirty-nine years of age and was a highly educated and cultured man, and was one of the best trained hospital administrators in the country. Before he took charge of Harper Hospital he was superintendent of the St. Louis City Hospital, a thousand-bed institution, for fifteen months, and previous to that had been superintendent of the Washington University Hospital for four years.

In each of his former offices he made an excellent reputation, and since his appointment at Harper Hospital acquired new laurels by a masterly administration of a great institution during a most perplexing period, during which an entire new building was planned and constructed, and the staff of the hospital completely reorganized.

Dr. Smith was graduated in medicine from Washington University Medical School in 1902. He leaves a widow and three sons, Levart, aged twelve; Wayne, ten; and Ames, six years of age.

The funeral took place in Detroit.

The name of the New York Red Cross Hospital, Central Park West, at 100th street, has been changed to "Park Hospital," and the institution will no longer be associated with the American Red Cross Society. The Red Cross Hospital was founded in 1894 by the New York branch of the American Red Cross, under Miss Clara Barton, for the purpose of training surgeons and nurses for service in war. In 1898, during the Spanish-American war, the hospital was a nucleus for the formation of the New York Red Cross Relief Association. Its surgeons and nurses volunteered and were assigned to duty in Cuba. The present Red Cross plan of accepting surgeons and nurses from all reputable hospitals has rendered affiliation with a special hospital unnecessary.

PREVENTION OF BLINDNESS MATERNITY

Conducted by CAROLYN CONANT VAN BLARCOM, R. N.,
Secretary National Committee for the Prevention of Blindness;
Chairman Committee on Prevention of Blindness and Midwives National Organization for Public Health Nursing.

The Present Status of the Movement for the Prevention of Blindness[1]

BY EDWARD M. VAN CLEVE,
Managing Director, National Committee for the Prevention of Blindness.

Preventive medicine and preventive social service hold more than ever the center of the stage. It is estimated that the physician who serves his patient best is occupied more than half his time in finding ways and means to ward off disease instead of drugging it when developed; so that the Chinese way of paying the doctor when the family are well and cutting off his stipend when illness overtakes any member would seem to have some basis of fairness in the modern view. In social service it is far better to prevent a slum than to clean one up, to save a boy from vice than to cure a vicious habit, to preserve life—physical, spiritual—than to recover it or bemoan it. When preventive medicine and preventive social service are joined in the effort to help mankind there must result a saving of the most precious of our physical possessions and an addition to human joy.

In the movement for prevention of needless blindness men of the medical profession and the workers in the field of social betterment find a ground of common action and community of interest. The lay movement is about ten years old, and from the first it requisitioned the services of both physician and agent of the common weal; today the most promising work combines the activities of both in equal degree.

It is my present function to represent what many of us have for several years hoped to see established, namely, a national bureau of information, inspiration, and practical help, now a realized fact in the National Committee for the Prevention of Blindness. This committee is the union of the American Association for the Conservation of Vision and the New York State Committee for Prevention of Blindness, effected at the first of the year 1915. It proposes to become for the nation a clearing-house on all subjects connected with the conservation of vision and the prevention of blindness. Its aims are thus stated:

1. To endeavor to ascertain, through study and investigation, any causes, whether direct or indirect, which may result in blindness or impaired vision.
2. To advocate measures which shall lead to the elimination of such causes.
3. To disseminate knowledge concerning all matters pertaining to the care and use of the eyes.

Of its program only that part which has to do with publicity and education has thus far been entered upon, the field of research being as yet unattempted; and it may be some time before this sort of service can be essayed. The type of work it purposes to do is indicated by its earliest publications, its helpful personal service in several states, its authentic news department. As evidence of the committee's substantial character mention may be made of the membership of its board of directors, including four widely known ophthalmologists, a prominent obstetrician, four distinguished attorneys, representing, however, not the law, but each some form of philanthropic or social service, a university department head, a member of a school board and a city superintendent of schools, a principal of a school for the blind, an illuminating engineer, an efficiency engineer, two great business men—one from the far east and one from the middle west, the head of the National Children's Bureau, the head of one of the great Foundations for improving the conditions of the people, a man and a woman giving their life to the solving of problems of charitable service, and last and greatest, Dr. Louisa Lee Schuyler, the inspiration, the soul, the virtual author of the national movement, whose faith and far sight have made possible the effective organization of this attempt to serve in saving from blindness all we can of the innocents yet unborn and the weak and helpless and ignorant.

Former president of the United States William Howard Taft received a cordial invitation to become Honorary President of the National Committee, and accepted election to this office; and, expressing their warm interest and approval, a number of other notable men and women have accepted election as honorary vice-presidents: Miss Jane Addams, of Hull House, Chicago; Hon. Joseph H. Choate, diplomat, publicist, philanthropist; Hon. Thomas P. Gore, Senator from Oklahoma; Miss Winifred Holt, founder of the New York Association for the Blind, and friend of the blind; Dr. Abraham Jacobi, Nestor of the medical profession; Dr. David Starr Jordan, educator and President of the National Education Association in this year 1915; Miss Helen Keller, literary genius; Hon. Theodore Roosevelt, former President of the United States; and Mrs. Ella Flagg Young, Superintendent of the Chicago Public Schools.

Fig. 1. Cheap eyeglasses are a menace to eyesight.

To strengthen the hands of this committee, we invite the assistance of all in the interests of those already blind. You know how needful this service is, how pitiful it is that year by year a hundred boys and girls who should not have become blind are entering our schools, and that hundreds more are going through life handicapped by defective vision from one cause alone, the inflammation of

[1] Paper read at the meeting of American Association of Instructors of the Blind at Berkeley, California.

Fig. 2. Pennsylvania State School for the Blind at Overbrook, Pa.

the eyes of the new-born. We want you to become members of the committee and lend us your aid; we want to serve you in your own efforts to cancel the effects of ignorance and neglect and misfortune.

Ophthalmia neonatorum continues to send to the schools for the blind a large percentage of unfortunate children. I am gratified to be able to announce a reduction in the rate to 15.1, 28 schools reporting.

PROPORTION OF PUPILS NEWLY ADMITTED TO SCHOOLS FOR THE BLIND DURING THE PAST EIGHT YEARS WHO ARE BLIND FROM OPHTHALMIA NEONATORUM

School year	No. of schools	Total new admissions	Pupils blind from O. N.	Percent
1907-8	10	290	77	26.5
1908-9	14	300	68	22.6
1909-10	13	325	67	20.6
1910-11	15	351	84	23.9
1911-12	24	415	88	21.2
1912-13	21	386	88	22.7
1913-14	19	428	84	19.6
1914-15	28	602	91	15.1

The percentages for eight years are: 26.5, 22.6, 20.6, 23.9, 21.2, 22.7, 19.6, 15.1. Are we beginning to make an impression? So we fondly hope. About one-fourth of all children in thirty schools reporting are blinded by this one disease. Agitation and education must continue not five years, nor ten years, but *all* years. There is no occasion as yet, nor do I believe there will be for a generation, to let up. Improvements in the laws have taken place in several states, and the hands of the workers for prevention of blindness have been strengthened during the past legislative sessions.

Increasing interest and greater accuracy are evident in the reports from the several schools for the sightless. Seven years ago ten schools were able to furnish statistical information, most of it very valuable and accurate; in 1915, 28 schools reported, and there is shown a greater attention to causes of blindness and interest in its prevention. Some states are putting this work of prevention of blindness in the hands of the school authorities. Arkansas gave Superintendent Hinemon a fairly liberal appropriation for spreading the news that half of all blindness is needless. Indiana has given the task of carrying forward this movement into the hands of the state school. Minnesota entrusts to its school for the blind the propagandism that will deplete its halls.

The midwife problem continues to be acute in some sections. The question is still one for debate whether midwives should be adequately trained, examined and licensed, or should be eliminated in our country. The latter is impracticable in some sections, but in others is entirely practicable, and many believe desirable. There are all stages of opinion between the extremes of intolerance and cordial recognition. The former is perhaps well illustrated by a statement of a prominent worker in this field, who, after careful study of the midwife situation, said: "There is only one good midwife in the state of ———, and she's not any good."

Little attention has been given heretofore to the instruction of the public, particularly parents and those having charge of young children, as to the possibilities of loss of sight through measles, scarlet fever and other diseases of childhood. The National Committee has issued as its Publication No. 1 a booklet dealing not only with ophthalmia neonatorum, but with these other diseases of childhood which produce so many of the cases of blindness among the young. Many children are permitted to go blind through carelessness or ignorance at the time of suffering from such diseases.

School inspection is becoming more prevalent and has a better character. The ordinary school inspection with which many of us are familiar leaves much to be desired. The improvement, however, is worth noting, and there will surely be a great change for the better as respects children's eyesight when inspection becomes universal, as it ought to be, and effective, as it can be.

Trachoma was formerly very prevalent in New York City, but the efforts of enlightened medical men and an aroused school board have resulted in a diminution of this trouble until there is very little in the metropolis, and that of a very mild type. The immigration office strives to be careful and to refuse entry to those who have this serious disease. In Boston the medical immigration au-

thorities have been able to stamp out trachoma pretty effectually. In the mountains of Kentucky, Virginia, West Virginia and Tennessee there has been a prevalence of trachoma to an alarming degree, but the United States Government, having become aroused to the condition, is handling the situation with its usual thoroughness. Similarly, among the Indians, trachoma having progressed so as to prove a great menace, the Government has taken strong means to blot it out. This disease calls for drastic treatment and watchful care.

Whether wood alcohol is becoming more dangerous as it is more highly refined, or whether we are hearing now of deaths and blindness resulting from its use, whereas in the past it was not looked upon as a dangerous cause of these calamities, is a matter of opinion; but there have been in recent years accounts of many deaths and considerable blindness from drinking wood alcohol or breathing its fumes. Progress is being made in the effort to have the name absolutely eliminated, the liquid marked "poison," and in these efforts the leading manufacturers are lending their assistance.

The passing of workmen's compensation laws is becoming a habit with the legislatures of the various states. Blindness from accidents in the industries will therefore become less according as these laws are properly enforced. The "safety first" movement is helping greatly in this particular, and may serve the purpose of arousing an active interest in the prevention of blindness in states where the matter is not made the subject of legislative enactment. There remain, of course, the many cases of accidental blindness that can not be taken care of by law nor avoided except by knowledge and care on the part of parents and the possible victims themselves. Education on this subject is still very necessary.

Fig. 3. Various preparations and drinks that are adulterated with wood alcohol, unlawfully, causing death or blindness.

Illuminating engineers are today more in demand than they have ever been before, and the American people are coming to the realization that there is such a thing as too much or ill-directed light as well as insufficient light. Our cult acknowledges indebtedness to the illuminating engineers and forms a working combination with them in the movement for the conservation of vision. Much still remains to be done so long as children in school rooms are seated with their faces toward openings or school rooms are ill lighted; as long as factories and other places where workers are engaged have not the proper means of illumination.

A field of interesting study is opened up by the question of the proper sorts of type, quality and color of paper, styles of binding, et cetera, that go to the making up of our school text-books as well as of the magazines and books that are used by adults. This is not a field for legislation, but is a subject that is attracting attention among enlightened school authorities and the members of the medical profession.

A most notable contribution to the cause of prevention of blindness is that made by the American Medical Association through its Committee on Conservation of Vision. This American Medical Association Committee was for some years directed by Dr. F. Park Lewis, under whose inspiration the lay movement had its early growth. For two years it has been under the direction of Dr. Frank Allport, of Chicago. He developed a plan for lectures, utilizing the talents of men in the profession and the machinery of the American Medical Association. Each state, through a state manager, arranges for lectures throughout the state, the effort being made to have not less than one in every county, and as many more as practicable. All this work is done by the members of the profession without compensation, and in many cases the lecturer has paid his own expenses.

I wish at this point to pay my respects to the medical profession, or, at least, that portion of it with whom it has been my good fortune to associate in a somewhat unusually intimate way—intimate for a layman—during the seven years of my special connection with prevention of blindness work. They have won my respect and admiration for their interest in social service. Unselfishness and marked devotion to the cause of public welfare to a degree hitherto unsuspected have been disclosed in these intimate relations. Willingness to help in the cause of prevention of blindness and to serve the workers in this field has been shown so many times that too high praise cannot be spoken of these choice spirits.

As a result of the lecture campaign of 1914-15, Dr. Allport's report to the American Medical Association declares 38 states in cooperation, 518 lectures delivered, 120,000 people in attendance. Further, great interest has been manifested in the localities where the campaign had been pushed in correction of bad eye conditions through school inspection and operations secured privately or at public instance; laws have been enacted; much publicity has been obtained. Strong encouragement for a continuance of this specialized service is indicated in the conditions which this report discloses, and all workers for the prevention of blindness will wish more strength and even greater success to this committee of medical men.

Workers have every reason to be encouraged in the belief that advance is being made, that the field is being worked; there is encouragement also in the appreciation of press and public of this service to humanity and the state. More strength to us all!

A hospital for laboring men and their families, designed to serve as a social center as well as to care for the sick, is projected at Ensley, Ala. It is planned to operate in connection with the hospital a free kindergarten, a free kitchen for school children whose parents are too poor to provide proper nourishment; a mothers' club in which the mothers will be taught the proper care of infants, the hygienic keeping of the home and the correct manner in which food should be prepared; and a fathers' civic association in which the men can be trained to save and economize by proper management of their earnings. It is also hoped that the laboring people may be made to realize their importance to the community and inspired with a sense of civic service by means of study classes, lecture classes and through personal contact, by which correct information with regard to social conditions and problems may be disseminated. Rates for hospital service are to be fixed at a low figure in order to eliminate the charity idea so far as possible. Rev. J. W. Fulford, rector of St. John's Episcopal Church at Ensley, is one of the most active promoters of the movement.

SOCIAL HYGIENE
VENEREAL DISEASES

Conducted by WILLIAM F. SNOW, M. D.,
General Secretary, The American Social Hygiene Association,
105 West Fortieth Street, New York City.

Popular Education in Social Hygiene

"The Campaign Against Syphilis,"[1] a pamphlet issued recently in London, and based upon the evidence taken by the British Royal Commission on Venereal Diseases, is one of the latest and most convincing of documents intended to bring to the effectual attention of people some of the vital facts about these diseases.

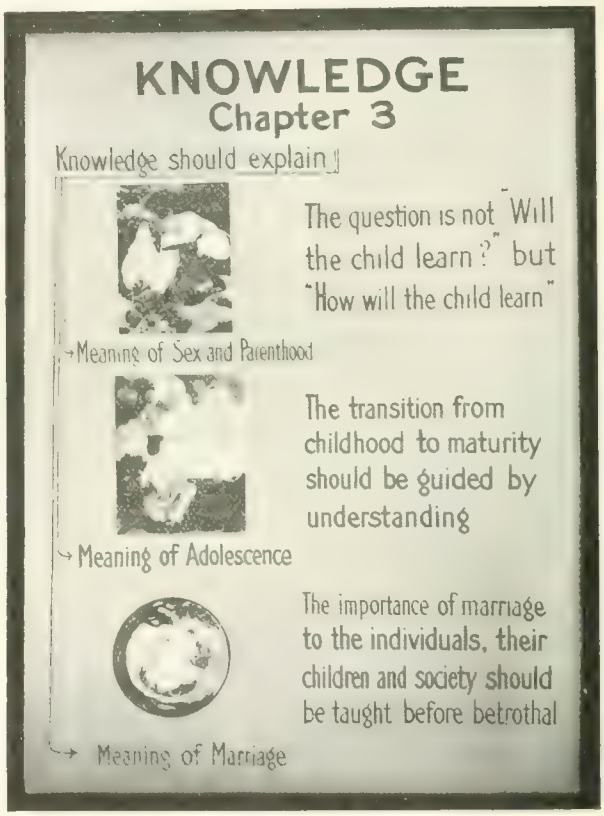
One of the most influential factors leading to the appointment of the Commission is described as follows:

GUIDE, PHILOSOPHER AND FRIEND
It is the privilege and duty of parents
TO GUIDE
their children in the early development of character and morals
TO GIVE
them their first information about sex and Parenthood
TO BE FRIENDS
and comrades with them and to make home attractive

Panel exhibited by the American Social Hygiene Association at the Panama-Pacific Exposition.

"On July 22, 1913, there was published in the *Morning Post* a letter, signed by the Presidents of the Royal Colleges of Physicians and Surgeons of London and by 36 other leaders of the medical profession, appealing for the appointment of a Royal Commission to inquire into the present state of our knowledge of venereal diseases, and to advise what steps should be taken for their prevention and cure. The following is an extract from this letter:

" 'There has always been a conspiracy of silence as regards venereal diseases. The time, however, has come when it is a national duty to face the facts and to bring them prominently to the notice of the public. When the subject was discussed last year at the Royal Society of Medicine it was stated without contradiction that in London alone there are forty thousand new cases of the gravest form of the disease every year, and in the United Kingdom as a whole a hundred and thirty thousand such cases. The worst form of venereal disease is highly contagious and dire in its effects. It claims its victims not only from those who have themselves to blame for contracting it; it is one of those diseases that may be transmitted from parent to child, so that the offspring of a sufferer is born with the virus actually in its tissue, to cause, it may be, hideous deformity, or blindness, or deafness, or idiocy, ending often in premature though not untimely death. Innocent members of the public, wives, children, doctors, dentists, students, and nurses are among those who during the routine of their ordinary daily lives are often accidentally called upon to pay a tragic penalty for the wiiful blindness that ignores its existence. There is a great volume of evidence that locomotor ataxia and general paralysis are its belated manifestations. We are living today in a new era as regards diagnosis and treatment. The microbes responsible for these diseases have been discovered in recent years; means of diagnosis far in advance of previous experience have been elaborated and treatment has been enormously improved. The time is therefore appropriate for an organized effort on a comprehensive scale to reduce the incidence of these diseases. The experience of the Royal Army Medical Corps during the last few years has shown the enormous reduction in all forms of the disease that can be brought about as a result of systematic effort. Organized effort among the civilian population is impracticable until the public conscience has been aroused, and can only be attempted after a full and authoritative investigation.' "


KNOWLEDGE
Chapter 3
Knowledge should explain
The question is not "Will the child learn?" but "How will the child learn"
Meaning of Sex and Parenthood
The transition from childhood to maturity should be guided by understanding
Meaning of Adolescence
The importance of marriage to the individuals, their children and society should be taught before betrothal
Meaning of Marriage

Panel exhibited by the American Social Hygiene Association at the Panama-Pacific Exposition.

The venereal diseases are defined as "the diseases which are the result of, and may be caught in impure sexual intercourse, and which may be given by an innocent mother to her unborn child, owing to her having been infected by her husband." Their nature, communication, and effects are described in plain terms, and responsibility, treatment, and prevention discussed.

Regarding prostitution as the source of these diseases, it is said that—

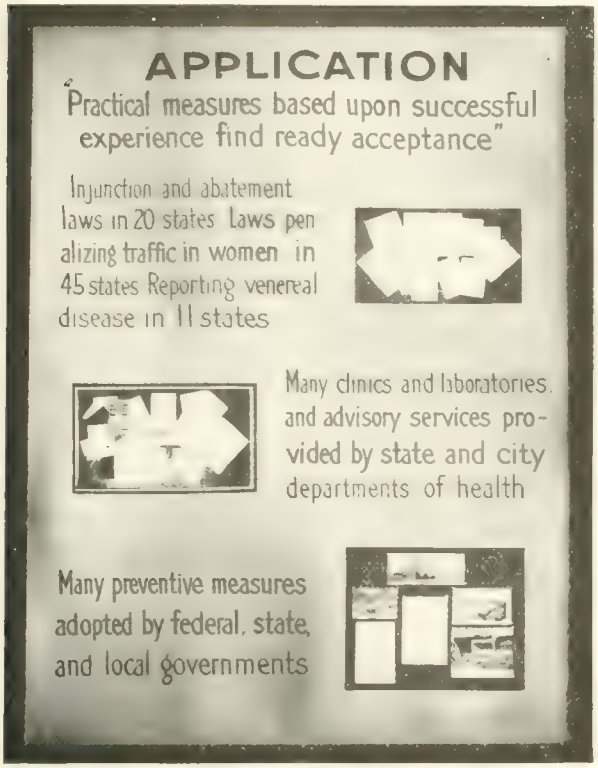
"This evil flourishes today, just as cholera and small-pox and ague used to flourish in England, not because it possesses any resistless essential power in itself, but because good, respectable, well-meaning, upright you can use any word you like to describe yourself people are more or less frightened or imposed upon by the seeming strength and permanence of the evil, are paralyzed by their own failures and weaknesses, are in a greater or less degree slothful, flabby, selfish, cowardly, blind, and dull. Certainly one of the root causes is that, to use a popular phrase, we take these things 'lying down.' We look upon prostitution as we used to look upon consols and the House of Lords as one of the great certain unvarying everlasting realities. . . . Is it reasonable that the greatest evils should be encouraged because a few, however powerful they may be, choose to decree against reason

[1]The Campaign Against Syphilis: By F. W. Giles, M. B. King & Son, London, 1915. 6d.

and experience that such evil is a necessity of existence. . . . In modern social life few things are more remarkable than the immense power wielded not only in minorities, but by minorities as contemptible in numbers as in principle. . . . When we come to go more minutely into the question of the cause of submission of the good, we shall find that 'expediency' and an indisposition to oppose anything which has been advocated with great persistence and energy, are the only explanations offered, as well as the ever-prevailing excuse.

"Possibly the time will come when it will be proved that to speak of moral evil as an 'atmosphere' or as a material influence is not a forcible fgure merely, but strictly correct.

"The counteracting atmosphere, which we must all do our best to help to create, will be free from cant and pharisaism, but free also from sentimentality and time-serving tolerance. It will be at once unyielding and charitable. In it will mingle hope and fear and reverence. The spirit whose breath will keep it from stagnation will not recklessly uncover and stir up the depths of shame and depravity."


APPLICATION
"Practical measures based upon successful experience find ready acceptance"
Injunction and abatement laws in 20 states Laws penalizing traffic in women in 45 states Reporting venereal disease in 11 states
Many clinics and laboratories and advisory services provided by state and city departments of health
Many preventive measures adopted by federal, state, and local governments

Panel exhibited by the American Social Hygiene Association at the Panama-Pacific Exposition.

The following paragraphs may well serve as the basis of a working program:

"If we drop figures and return once more to the level of bare fact, it is certain that the Royal Commission in its final report will lay great stress on the necessity of making it as easy as possible for those who are suffering from venereal disease to secure first-rate advice and treatment. It will no doubt advise the use of public money in order to place modern means of diagnosis and treatment within the reach of the poorest, and the most extensive possible program of education and warning for the young, and for those diseased. But it will certainly, as far as one can judge, not recommend much in the way of legislation, nor the use of compulsion for the civilian population in any shape.

"It will suggest that the 'stigma' or reproach attached to these diseases is one great obstacle to people who might otherwise be willing to apply at once for treatment.

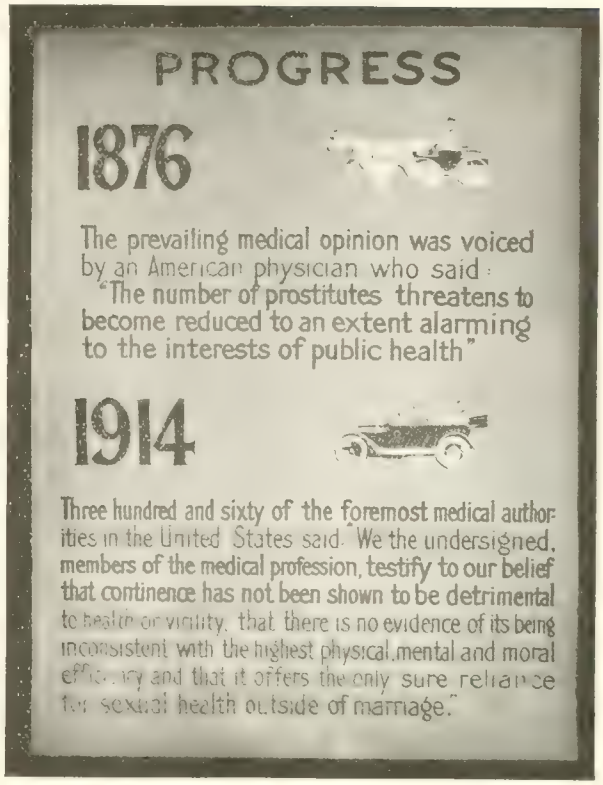
"Now, if there is to be no compulsion there must be a helpful atmosphere; a feeling of helpfulness in the air, sprung from the sense of a common responsibility, and a common burden to be borne.

"But surely it would be a pity to make too much of the fear of reproach. Our men are not wanting in common sense, and certainly they are not cruel, nor reckless about the sufferings of women and children.

"Any man who reads this pamphlet fairly must admit that it is common sense to do the best he can to avoid the risks to himself and others that it describes; while, as for the women and children, well—we take it for granted that they go first into the boats, because this has become a national habit. When it has become a national habit to put them first in what is much more than a matter of mere life or death, syphilis and prostitution itself will be in a fair way to disappear.

"Still it is useless to pretend that the responsibility lies with equal weight upon us all, or to adopt the policy of whitewashing corruption. Unclean living, whether occasional or habitual, is not a misfortune, but a vice. It would be nothing short of a public calamity if the idea gained acceptance that syphilis is not to be more abhorred than smallpox, and that he who carelessly, or after warning, transmits its poison to his wife and children, ought not to be held guilty of a crime."

The popular reception which is accorded such documents both in this country and abroad is reflected in the interest shown in social hygiene exhibits such as that of The American Social Hygiene Association at the Panama-Pacific Exposition, certain panels of which are reproduced herewith. It is safe to forecast a great increase in the number of such authentic documents based upon scientific studies of the questions involved within the next few years.


PROGRESS
1876
The prevailing medical opinion was voiced by an American physician who said:
"The number of prostitutes threatens to become reduced to an extent alarming to the interests of public health"
1914
Three hundred and sixty of the foremost medical authorities in the United States said. We the undersigned, members of the medical profession, testify to our belief that continence has not been shown to be detrimental to health or virility, that there is no evidence of its being inconsistent with the highest physical, mental and moral efficiency and that it offers the only sure reliance for sexual health outside of marriage."

Panel exhibited by the American Social Hygiene Association at the Panama-Pacific Exposition.

New Hospital Regulations for Kansas City

The Kansas City (Mo.) Hospital and Health Board is given authority to control all private hospitals in the city. Following are the requirements affecting such institutions, which were established by a resolution recently adopted by the board:

No person who does not hold a state license to practice medicine in Missouri and who does not appear in person before the Hospital and Health Board, will be granted a license to operate a hospital.

Applications for licenses must be made out on blanks furnished by the board, and every application must be indorsed by four reputable citizens, three being physicians in good professional standing.

Hospitals must have at least ten beds and be provided with a fully equipped and sanitary operating room for emergencies.

A sufficient stock of suitable drugs must be carried, except in osteopathic institutions.

Major operations may not be performed by any but a surgeon or physician of recognized standing.

A licensed physician or graduate nurse must be promptly available at all times.

The names, previous addresses and qualifications of all nurses employed must be filed with the Hospital and Health Board at least every three months

Full inquiry into all births, also into any deaths from seemingly avoidable operative shocks, is provided.

Only hospitals devoting twenty percent of their proceeds exclusively to charity work and operating free clinics approved by the Hospital and Health Board will be classed as charity institutions.

DISPENSARY AND OUT-PATIENT WORK

Conducted by MICHAEL M. DAVIS, Jr.,
Director of the Boston Dispensary.

Health Insurance and the Dispensary

Among the thousands of physicians, hospital superintendents, and hospital workers of all kinds, who are visiting the San Francisco Exposition this year, how many have spent an hour at one of the most interesting and novel medical undertakings of the country, that of the University of California, in providing "Health Insurance" for its seven thousand students?

The University belongs to the state and is supported by state funds. There are no fees for tuition, only some small fees for special purposes; among these is a fee of $4 annually for the care of health. This is compulsory, every young man or young woman (needless to say the University is co-educational) must pay it.

This is what they get for their money:

A complete physical examination at the opening of their college course.

Medical advice based on this examination from the examiner, who, for the men, is the Professor of Hygiene in the University or one of his assistants on the staff; for the women, a woman physician, also holding a University position.

Medical care for minor illnesses—everything from a cut finger to an attack of indigestion or homesickness. This is given in the University dispensary, located on the campus at Berkeley, California. Of the organization of this dispensary, a word will be said later.

Hospital care in serious illness in the University infirmary, which is in the same building as the dispensary, and provides forty beds.

The $4-a-year fee covers all expenses, whether the student has occasion to see the doctor only once at his annual examination, or whether he is at the dispensary fifty times, or has an attack of typhoid that lays him up in the hospital for six weeks. The only extra fee is in case of operation, and these fees are moderate.

The medical staff providing these services are University appointees, the chief of the staff being the Professor of Hygiene, who, as he also gives class instruction to the same students over whom he has medical oversight, comes in contact with his own pupils and with the whole student body in a many-sided way.

The $4 fee and the minor income from operations pays the whole expense of the service, including the hospital, the dispensary, the nursing, etc.

The dispensary itself is a pleasure to visit. It covers the ground floor of the building, of which the upper floors are occupied by the hospital. An average of about 100 visits a day are made by the students to the dispensary. A walk through the clinic will be enlightening to those who have always thought of a dispensary as a place where chiefly charity was dispensed. This institution has nothing to do with charity. It is a cooperative organization for the provision of medical service, self-supporting, like a mutual insurance company, only there are no mahogany offices for the vice-presidents. Students entering have a convenient room, simply furnished, to wait in, are registered, or re-registered at a desk, and pass to their clinics. The dispensary is open at separate hours for men and women, though urgent cases from either sex may be received out of the usual hours. Besides the general medical men, such specialties as eye, throat and nose, etc., are represented on the regular staff. The members of the staff of the University Medical School in San Francisco might, of course, be called in, if necessary, in obscure cases.

A nurse, picked both for her training and her personality, is on service in the institution for personal work with the students: what, in an ordinary dispensary, would be called "social service."

In considering the remarkably low cost for students, $4 a year, for this complete care, including hospital service, it must be borne in mind that these seven thousand persons are a selected body of young men and women, living under hygienic conditions, in a good climate and at an age when the amount of disease is at a minimum. On the other hand those who want to examine the statistics of the dispensary might be surprised at the large number of visits which these students pay there—30,000 a year—or more than 4 per student. This is explained when one examines the reasons which bring them to the clinic and find the comparatively minor diseases for which they visit the doctor—colds and scratches and little worries, which soon are set right and which do not progress to congest the lungs, or infect the blood, or upset the nervous system. Such a dispensary is a home of practical preventive medicine.

Annual Reports

The time of year is at hand when the superintendent sits down by himself and says, "Now I must make the annual report." The fiscal year of many institutions closes September 30; with others, December 31; but the season of the deadly report is at hand either in fact or in near prospect.

Hospital reports have so generally made the reader hunt for anything about the out-patient department that it seems fitting to bring up the matter of annual reports at this time of year.

The annual report of a hundred-bed hospital in a middle-sized city includes 110 pages. They treated about as many patients in the dispensary as they did in the hospital. Except for but two paragraphs in the "Report of the Trustees," and one in the "Report of the Superintendent," nothing appears about the dispensary besides a few statistics. It is difficult to find that the hospital had a dispensary without hunting for it, for there is no table of contents, nor index; and the various reports of trustees, superintendent, superintendent of nurses, etc., are so sandwiched in amid tables of operations performed, lists of diagnoses, obituaries of benefactors, photographs of buildings, expense accounts, and lists of contributors, in a sort of general hash.

This is typical of 80 percent of existing hospital reports. The lack of adequate space for the dispensary or out-patient department, is one of the least of the troubles; but since the dispensary is the subject of this Department of THE MODERN HOSPITAL, the following is to suggest the items which a superintendent or committee of trustees, might well consider in making up the annual report for the year of grace now closing.

First: Is it not well to consider whether a report is

meant for the people who already know about the hospital. or for those who do not yet know much about it? If for the former, it should be interesting; if for the latter, it merely needs to be instructive. The hospital that has all the money it needs can afford to present a dreary report; for any other hospital, is not an uninteresting report an expensive investment?

With this in mind, the following points may be mentioned:

1. *Arrangement.* The opening portion of the annual report should give an idea of *all* the divisions of the hospital, and should put them in some perspective. Every report should have a table of contents.

2. *A Special Report for the Out-Patient Department.* Every hospital in which the number of out-patients equals or exceeds the number of ward patients should give a special section of its report to the out-patient department, as a division of the hospital work. Such a report might be a section of the trustees' or superintendent's report, or it might be a report of a special committee on the out-patient department. Such a special report ought to contain:

An idea of the general organization of the dispensary and of its medical service. It is probably well to print detailed statistics of the dispensary in the statistical section of the report, and only the general figures here.

Changes during the past year which have taken place in relation to such matters as building, equipment, medical staff, executive staff, clinical methods, social service, etc.

Something about the problems of the work. The public really ought to be given the impression that the authorities of the hospital are *thinking* a little about the dispensary as well as running off clinics.

3. *Out-Patient Statistics.* The report should state, for the period covered by it, (1) the number of patients, classified by clinical departments; (2) the number of visits made by these patients, classified by departments; (3) the average number of visits per patient for each department.

Statistics of special work—x-ray, social service department, etc., should be given.

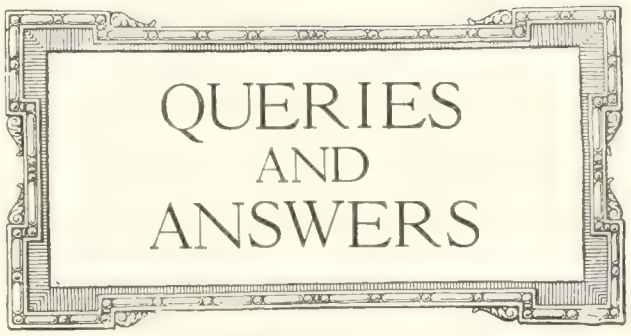
4. *Finances.* The cost of the out-patient department should be included in the "Treasurer's Report," itemized so far as practicable, and the income from fees paid by patients, if any.

5. It is useful to place somewhere in the report the rules covering the admission of patients (to the dispensary as well as to the hospital wards), the days and hours at which clinics are open, the fees charged, if any, etc. Such information is often convenient for persons, or to charitable agencies, who might have occasion to refer patients to the hospital.

Trust Fund of $20,000 for Artificial Teeth

The coroner of London at a recent inquest discovered a piece of meat three inches long lodged in the larynx of a man whose death was caused by suffocation. Dr. Waldo, in his report of the inquest, called attention to the fact that the man had but the remains of two teeth on opposite sides of his mouth—and laid stress on the urgent need of funds for providing the poor with artificial teeth. The report also cited another case in the same district where death was practically the result of starvation owing to want of teeth; and it pointed out the numerous ills—mostly preventable—due to the lack of teeth. Mr. Edwin Tate, the brother of the founder of the Tate Gallery, read the report of this inquest, and as a direct result the "Edwin Tate Trust Fund" of $20,000 was started at St. Bartholomew's Hospital. The scheme has been approved by the Charity Commissioners, and the editor of *The Hospital*, London, commenting on the new departure, expresses the hope that another benefactor may be found to provide a similar trust fund at Guy's Hospital.

The city emergency hospital at Butte, Mont., has lately been renovated throughout and fitted up with new equipment.



Soiled Dish Baskets

To the Editor of THE MODERN HOSPITAL:

Can you tell me where I can find rubber or wire baskets to fit in sinks for washing dishes? I find so many of our dishes crack and chip from striking against the porcelain.

RUTH G. CLARK,
Hudson City Hospital, Hudson, N. Y.

There are no such baskets as you are thinking about on the market, and I am quite sure you will have to have them made. Almost any woven-wire works can make the baskets you refer to and they will put at the proper places small lengths of rubber tubing to cover the wire to protect the basket from shocks between the dishes and the sink or container; but far better than this will be for you to have these baskets made of wood or bamboo. Anyone accustomed to reseat chairs can make you just what you want, or a good carpenter can make these baskets out of the ordinary basket material used for marketing fruit and vegetables. These baskets should be very cheap, and while they will last a good many months if properly cared for, they will be inexpensive and consequently you can afford to change them as often as necessary.

Some years ago we had precisely this problem and we bought some wire letter baskets, such as are used on office desks. The wire was small enough to yield sufficiently to save the breakage of dishes and in order to fasten the baskets in the sink we used double hooks, "S" shaped, one hook to catch the basket and the other to go over the edge of the sink. Four of these hooks will do for each basket.

The main point is that there is nothing on the market that you can buy, and you are going to have to use your ingenuity to create something of your own. The above are merely suggestions along this line.

Plans and Cost of a 25-Bed Hospital

To the Editor of THE MODERN HOSPITAL:

Can you furnish plans and probable cost for a modern hospital of twenty-five beds, with good-sized operating and sterilizing room? If not, can you give me information or address of someone who can give me the information I am seeking?

M. A. D., Bath, N. Y.

There are no standard plans extant, of small hospitals, that would meet your problem; each hospital in each locality is a problem of its own and must be considered with a view to local conditions and local requirements. If you will give us some information about what you are thinking of in the form of a hospital, we shall be very glad to help you with some sketches that should be a nucleus upon which you can base your future development.

We ought to know about the site on which you propose to build, and its relation to corners and to the town, and if we can have a map of the town, showing elevations of surface, it would be a good thing. We should know whether the new hospital is to be an addition to a present institution, whether it is to take the place of one you now have, or whether it is to be an entirely new hospital. We

should know whether it is your intention to take care of all standard medical services, such as medical, surgical, obstetrics, children, tuberculosis and the infectious diseases; and if you have any well-defined notions about the relative proportions of these services we should like to know about them. If you are thinking about excluding any of these classes of patients, we should know.

We ought to know also whether you propose that the original twenty-five bed hospital is to be the completed institution or whether you are thinking about making this the first unit, that may be added to once or twice or more times to make a comprehensive group of, say, a hundred b ds.

There should also be a simple survey made of your problem in the community; that is, we ought to know the chief occupations in the community; is it a mining, milling or manufacturing town, or what are the chief occupations of the people—because these facts have a large bearing on the probable proportion of the different classes of patients to be cared for.

What is the general financial status of your people? Are there many very poor people who would probably need free care, and if so, what proportion of the population; is there a large proportion of quite wealthy people who could be called on to bear more than their per capita share of the support of the hospital, and if so, about what proportion?

It makes a good deal of difference, also, how you propose to support your hospital after it is built; is it intended to be self-supporting from earnings from pay patients, and is it proposed that the amount of charity work shall be very small, or negligible, and if not, what are your sources of support for charitable purposes?

Will your town or county pay you to cover the cost of indigent patients?

It is sometimes quite easy to obtain money for the purpose of putting up a hospital building, whereas it might be extremely difficult to raise the necessary amounts to cover deficits each year, and you certainly ought to think about that before you build. It is a pretty bad thing to build a nice hospital and then be unable to support it.

Preliminaries for a Small Hospital

To the Editor of THE MODERN HOSPITAL:

Good Housekeeping magazine has advised me to apply to THE MODERN HOSPITAL for information concerning the best way of raising funds for a modern public hospital. Also as to means for equipment and maintenance.

We have but a small private hospital in our town, though the people of the town and county are well-to-do, and there is a state university located here.

The university has but two years of medicine and does not particularly need a hospital.

I have been told that if a hospital is owned by the county politics will ruin it. The town is too small to maintain a hospital alone. We have a small hospital association, struggling in its first efforts.

I should like to be able to interest the women of my club in the modern hospital idea and be able to inform my friends interested in the cause.

Any help you may give me will be very much appreciated.

MRS. J. H. HOWARD,
105 Yale St., Vermilion, S. D.

You are setting yourself quite a task in attempting to create a hospital in your town, but you are also setting out upon one of the most interesting and attractive, and certainly one of the most serviceable, tasks that you could possibly undertake.

Let us first see what you are confronted with: Vermilion, according to the 1910 census, had 2,187 people; it has ten physicians. You have now one hospital, the Vermilion City Hospital, with eight beds, of which Miss Roxey Robbins is superintendent. If these data are wrong, please set us right. It is presumed you have grown considerably since the 1910 census was taken, and perhaps you have now four or five thousand people.

Please let us know the character of the population. We assume there are not very many paupers and probably a good many people in moderate circumstances, and not very many rich people. It may be presumed also that you have no large manufacturing establishments that furnish work to considerable numbers of your people, but rather that they are small merchants and mechanics and serve the community about, which is probably a farming community. Please let us know about this.

We ought also to think about whether the new hospital should be a general hospital, with facilities to take care of medical, surgical, tuberculosis, maternity and children's cases and the infectious diseases; or whether you want to rule out some of these diseases or some of these classes of patients.

We ought to think not only about the money to build the hospital, but the money to take care of its support in the future. This can be done in one of several ways: first, by participation of the town or county, in which case the hospital would take care of the dependent sick of the town or county, for which a regular per capita sum would be paid to the hospital; or private subscriptions can be collected from people of means who will agree to give fixed sums from year to year; this is a rather hazardous way to support a hospital, because people who are willing to give this year may not be in a position to do so next year; then there is the third way, viz., to make the hospital self-supporting by charging patients regular fees for their care. In a good many places all of these means are taken and such an arrangement might be possible in your town. But in any event you ought to be thinking about that part of it; it is dreadful to build a nice hospital and then be unable to find the funds either to open it or run it. Then the question of the location of the hospital comes up. You must think about whether it is to be down in the town or out in the country; in the former case, think about the noises and the dirt and smoke; in the latter case, think about the transportation for the patients, for doctors, and for the friends and relatives of patients. If your hospital is to be out in the country; that is, in a town the size of Vermilion, say a mile out of the heart of the city, you should think about a small farm and a garden, with a little dairy, and poultry, because these will cut your running expenses to the very bone.

Then, after you have decided about the situation, think about the sewerage and water, and fuel for your power plant, and perhaps electric current for your lighting, in the event that you decide not to put in an electrical installation.

The way to begin your work is for you to get together a committee made up of half a dozen prominent men of the town, including the surrounding country, and a half dozen women. Then the next thing to do is to plan what you want—and raise the money for it, but plan it first, and then make some simple sketches of the plan, and these plans would include costs. This part is where THE MODERN HOSPITAL can be of service to you, and its editors will help you with these plans. You need not employ an architect at this stage—that will come afterwards.

After you get your plans and costs, then you are ready to go before your people with a definite statement as to what you propose to do, showing sketches of how you propose to do it, with figures as to what it is going to cost—and then ask them for money.

It would be better not to consider a municipally owned hospital in a town the size of Vermilion; as you say, politics will be liable to creep in, at the expense of the sick and the hospital funds. You would a good deal better have a board of trustees direct the affairs of the hospital, and make an arrangement with the town or county to help out for the care of the poor.

With your woman's club as a nucleus you should have the making of a fine working group, but everybody will have to repress themselves and their ambitions in the interest of the whole proposition, and not look for personal aggrandizement.

Now, when you get far enough along, let us know, and we shall be very glad to help you along the next steps.

To Meet a Difficult Situation

To the Editor of THE MODERN HOSPITAL:

The city of Tyler, Texas, together with Smith County, is contemplating erecting a city and county hospital, at a total cost of about $6,000, at an early date. Can you furnish data as to the number of beds that we could have for that money, with approximate cost of maintenance per day for each patient?

DR. ALBERT WOLDERT,
City Health Officer.

There is no printed matter that will be of very much service to you concerning your problem of a town and county hospital, but we shall be very glad to help you do what you want to accomplish.

For $6,000 we would not think of putting up a new building. You cannot possibly figure on any kind of a hospital for less than about a thousand dollars a bed, and then you would have to figure about $200 per patient for equipment, so that you can see that your $6,000 would not go very far. We think the best way to do, if you possibly can, is to find an old residence that can be altered for your purpose. There ought to be in your town a residence of from ten to fifteen rooms that could be rented or leased pretty cheaply, and it is almost certain that you can make such alterations as would be necessary for, say, $2,000, and for another $2,000 you ought to be able to put in sufficient equipment at least to start on. You would not be able to lay in any considerable supply of such things as linens and blankets, but you could buy enough to start with. For a hundred dollars per bed you can put in a pretty fair equipment. A considerable item of cost will be the fitting up of the operating suite.

If you will look over your town and see if you can find an old residence, or even a factory building that has been abandoned, and give us a sketch of the interior as it stands now, with a description of the condition it is in, we shall be able to suggest changes that will make it a good hospital.

How do you expect to maintain the hospital after it is started? You had better figure on about $1.50 per day per patient. If you have cheap meat and cheap vegetables, and if you can get hold of a few cows or buy milk cheaply, and get your eggs at a low price, you ought to get this $1.50 down to $1.25 or perhaps even $1.00 per day per patient.

Suppose you start with a twenty-five bed hospital; you ought to run it for about $40.00 a day and this would pay and feed your help, feed your patients and buy current supplies.

One of the first things for you to get is a superintendent, and there are very good women who can be secured who would be best equipped to run such a hospital as yours. These women make good housekeepers, most of them are graduate nurses, and some of them know how to keep a simple set of hospital books; they are good buyers, and if you get the right sort, she will do more than all other agencies combined to fix the status of the hospital in the affections of the people, so that your financial troubles for the support of the hospital ought not to last long or be very serious.

Are you proposing to handle your hospital proposition under the Colquitt law, passed a year or two ago? If you are, there should be some taxes coming to you that will make up any deficit that you might have, although we see no reason why, after you get started, your hospital cannot be made self-supporting, unless you are proposing to take care of a considerable percentage of free patients.

With these suggestions you ought to be able to find a place to start your hospital, and if you can give us the sketch of the building we shall be able to suggest the necessary changes and tell you about what they will cost. Then you can go on to the next step.

Soundproofing for New Wing

To the Editor of THE MODERN HOSPITAL:

We have recently built an addition to the Wheatland Hospital, consisting of a ground floor, a first floor, and a second floor. Between the first and second floors we laid hair insulating material as a sound deadener. This has not given satisfaction. We are now planning to put a steam laundry equipment in the basement, and wish to ask what you would advise to cut out the noise. This floor is not yet sealed, so that we can take any necessary measures. The flooring is cement, and the shaftings will be bolted to the floor, so that there will be no vibration. Please let us hear from you at your earliest convenience.

FRED W. PHIFER,
Wheatland Hospital, Wheatland, Wyoming.

Mr. Meyer J. Sturm, hospital architect, Chicago, answers this inquiry as follows:

I have had quite a bit of success by applying the deadening in the following manner: Over the rough flooring I have placed Cabot's heavy sheeting quilt and on top of this I have placed the ¾-inch or 1-inch strips of Flaxlinum, made by the Northern Insulating Co., St. Paul, Minn., these strips about 3 inches wide, fastening these down with 1x2-inch furring strips with as few nails as possible to get as near a "floating floor" as would be practicable. In placing the furring strips and the Flaxlinum under them it is absolutely necessary that they be placed off the joist centers so that none of the nails which are holding down these furring strips will go directly into the flooring, which is over the joists, or into the joists themselves.

I usually place the furring strip about 2 inches from the center of the joists. In this manner you avoid the "telephoning" of noise from one floor to the next below. This is not an expensive process, and is practically positive in its results. If I may make another suggestion relative to the shafting being bolted to the floor of the basement, why not run all the machines with individual motors, as it will not cost more than $200 or $250 in excess of having one large motor with the necessary expenditure of power and current when only one machine is running? This is the more modern method and is much more economical and positive and does away with the overhead or ground shafting entirely and makes every machine independent.

Wants a Small Psychopathic Hospital

To the Editor of THE MODERN HOSPITAL:

We are planning to build a city detention hospital. I am writing to ask you if you know of any modern detention hospital anywhere, of the size that is suitable to our city. I know there is such a hospital at Milwaukee, but that would be too large for a city like ours. If you can give me any information, or any suggestion as to where I may obtain this information, I shall be under many obligations. I am a member of the city council of Mitchell, S. D., and vice-chairman of our board of health. Our city has a population of about 10,000.

STEPHEN D. VAN BENTHUYSEN,
Dean School of Commerce, Dakota Wesleyan University.

Unfortunately there are no specially designed psycho-

pathic or detention hospitals built to be connected with small institutions, or for a small number of patients.

There are only four specially designed psychopathic hospitals in the country: the Boston Psychopathic, which is a part of Harvard Medical School; the Phipps Psychopathic Clinic, which is a part of Johns Hopkins; the Bellevue Detention Hospital, connected with Bellevue, of New York, and the Chicago Psychopathic, which was finished about six months ago. Two of these hospitals have been presented at length in THE MODERN HOSPITAL and we are sending you copies which contain them.

Undoubtedly the psychopathic idea is growing, and it is growing away from what we used to call the "detention" hospital, because the modern psychopathic hospital differs widely from a purely detention institution. It has connected with it a staff of specially trained men, and it has a laboratory for doing a wide variety of work; and it is the intention of the modern psychopathic hospital to make a diagnosis and treat and send back to their homes a large proportion of the patients who are sent there. To give you an idea of the old detention proposition we might tell you that the Illinois law as it stands today provides that a patient may not be detained in the detention hospital longer than ten days, and must then be sent along to the hospital for the insane or returned to his home. In the new detention hospital, or, as it has been named in violation of the Illinois statute, the psychopathic hospital, patients are kept at the discretion of the attending medical men, and a very large proportion of them are able to go back home again cured of their troubles; as, for instance, post-typhoid manias and post-puerperal insanity, both due to the absorption of toxins, and both usually curable, but slowly so. We regard it as a crime for society to brand the mother of a family with the taint of insanity by sending her to a hospital for the insane, who happens to have a post-puerperal insanity, which is no more a family taint than an insanity acquired by a blow on the head would be. Really, the idea of these psychopathic hospitals is to prevent patients from being branded with insanity.

We are deeply interested in your problem and shall be more than glad to help you design a hospital if we can know all the conditions. We wish you would tell us more about your case. Is your institution to be operated as a part of the city hospital, and if so, how many patients pass through your city institution, and how many patients were detained in an improvised detention department during the last year or two? In other words, how many patients do you expect in the institution you propose? We have an idea that you don't need a building at all, but that a small wing or a floor of a wing would do.

Please tell us also whether you propose to hold court to try these cases and what is to be your method of procedure in that regard; are the trials held in public and by a court of record, or is it a purely medical function, and are the cases heard in private?

Do you propose that this institution shall operate as a psychopathic hospital, such as we have indicated above, or does your law prescribe that patients shall be detained only until they can be committed, without any reference to diagnosis or treatment?

If you will give us some idea of what you and your people are thinking about, and some idea what your present city hospital is and its arrangement, perhaps we can hit on a good plan; but if we were in your place we would try pretty hard to fight away from the purely detention character of the institution.

We shall be glad to hear from you about these things and promise you all the help we can possibly give you.

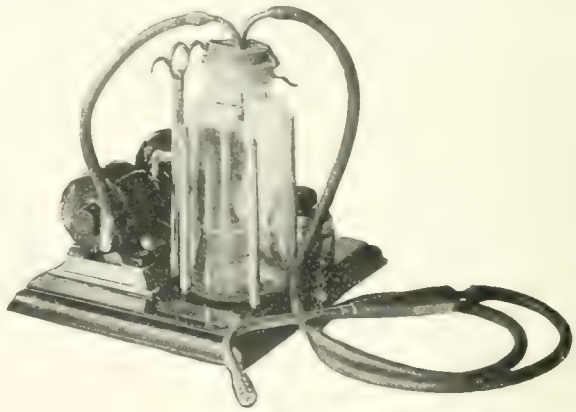
NEW INSTRUMENTS AND APPLIANCES

VINCENZ MUELLER, Technical Editor.
GEO. W. WALLERICH, Associate Editor.

The Carmody Electric Aspirator

The aspiration of blood or secretions during operations has proven a time saver in the operating room, and several forms of aspirators, both hand operated and electrically driven, have recently been placed on the market.

The device illustrated has been built according to suggestions by Dr. E. F. Carmody, of Denver, and while it was originally made for the purpose of aspirating blood and mucous during tonsil or adenoid operations, it has proven of great value in abdominal or other major operations. The apparatus consists of a universal motor which will operate on either direct or alternating current and a positive suction pump. These two are connected by means of a coupling. Attached to the suction pump is a flexible



Carmody electric aspirator.

tube which connects to the aspirating bottle. A second tube with a metal aspirating tube is used for carrying off the secretions. The apparatus is of compact form, occupying a space but 8 inches square.

The device should prove practical in the operating room on account of its having few working parts to get out of order. There are no belts to break or stretch and no leather packings in the pump to be replaced. The pump is of novel construction in so far as there are no sliding valves or springs. A continuous suction is produced so that the field may be quickly cleared by the assistant without the use of sponges. The apparatus is also suitable for sinus drainage, so that it will find a further place of usefulness in the hands of the nose and throat operator.

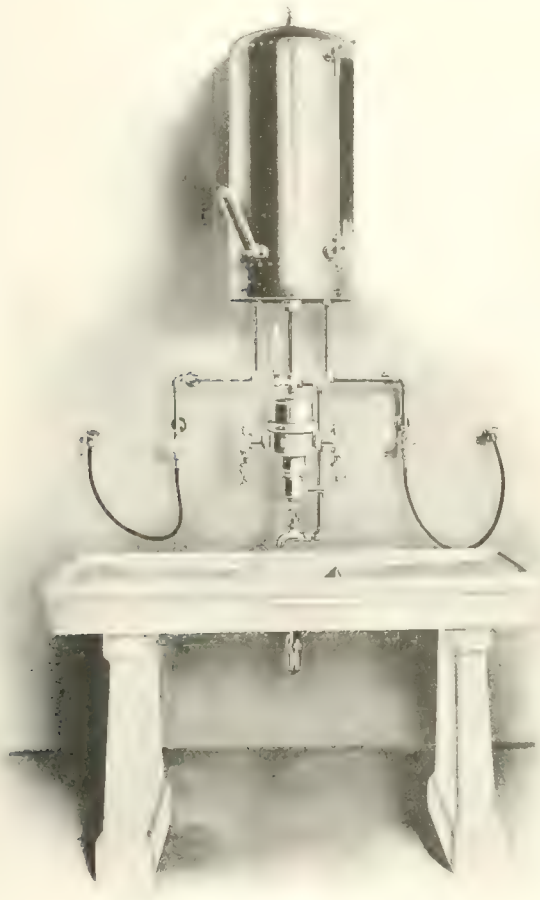
Effective Thermostatic Water Controller

The apparatus illustrated here will be found of interest to those who have charge of maternity hospitals and kindred institutions where successful care of infants requires careful handling of the bath treatment.

The illustration represents an equipment consisting of

a new-born infants' bath, automatic water temperature regulator and gravity tank. The regulator or controller is of course the most important feature of the equipment. This controller, the latest model built by the Powers Regulator Co., has several features which further tend to make the Powers controller a safe device, which can be depended upon to regulate absolutely the water temperature. Serious, and in some cases even fatal, accidents from scalding have occurred, so anything which tends toward "safety first" either in the infant bath or in connection with hydrotherapeutic apparatus is worthy of careful consideration on the part of hospital authorities.

With the Powers controller it is impossible to use water at a temperature above what the controller is set for,



Powers thermostatic water controller.

and while adjustable, it is so constructed that even the adjustment cannot be changed so as to give a delivery of water at a temperature sufficiently high to be dangerous. In fact, once set to deliver water at the desired temperature, it will continue to deliver it at that temperature regardless of the varying conditions of pressure or temperature in the supply line. Should the cold water fail, for any reason, the controller will close immediately against the hot water, thereby safeguarding the patient.

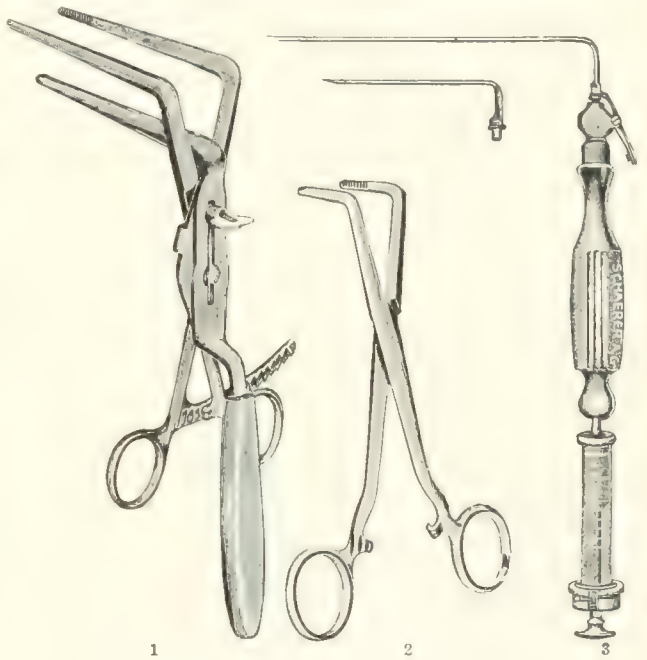
Used in connection with the baby bath there is a further precaution, since the sprays are fed from a gravity tank, precluding any possibility of excessive pressure.

In hydrotherapeutic treatment much depends on the exactness in following the physicians' precautions as to water temperature, and this important part of the details should not be left to the more or less irregular attention that is given by a hand-operated apparatus.

The Wullyamoz Horizontal Fluoroscope

The use of the fluoroscope for the location of foreign bodies, studying the peristaltic action of the intestines and stomach, lungs, heart, etc., has been greatly increased during recent years. Both in America and Europe new designs of apparatus have been developed to meet the requirements for this class of work. Several types of American-made apparatus have been described in these columns.

The apparatus here shown is manufactured in Bern, Switzerland, and has many features which are worthy of note. The high-tension wires which in other apparatus carry the current from the x-ray generator to the table as a rule are in the operator's or assistant's way to some extent. This new apparatus does away with all exposed high-tension wires, as the entire generating plant, controlling devices and table have been assembled in one unit, according to the suggestions of Dr. Wullyamoz.



1 2 3

Fig. 1. Three-bladed dilating forceps to facilitate extraction of foreign bodies.
Fig. 2. Right-angle forceps for removing embedded foreign bodies.
Fig. 3. Syringe and needle for producing local anesthesia.

The table proper is built of wood, which, of course, offers good insulation and prevents the leakage of current to patient or operator. At the head of the table, mounted on a shelf, is the induction coil. At the opposite end an improved form of mercury turbine interrupter with a synchronous motor (when operated on alternating current). Just above the coil is a controlling panel adjusted at an angle of about 45 degrees. This panel contains the rheostat for controlling the mercury interrupter, rheostat for controlling the supply current, ammeter and milliamperemeter. A freely moving carriage is provided for suspending the x-ray tube. In this manner the tube may easily be moved so that any part of the patient, from head to foot, may be examined with the fluoroscope. Dr. Wullyamoz has also designed several instruments and an improved form of fluoroscopic screen with folder. Three of these instruments are illustrated. The syringe, Fig. 3, is used for the purpose of producing local anesthesia during the extraction of foreign bodies; and three tube canulæ of different sizes, and the handle and record injection syringe go to complete the instrument.

The canula can also be used as a probe in locating the

foreign bodies, for puncturing abscesses, etc. Fig. 1 shows a three-bladed dilating forceps for foreign bodies; Fig. 2 a right angle forceps designed for removing particles which are deeply imbedded.

The fluoroscope has been designed so as to make it collapsible, and it can be strapped to the operator's head.

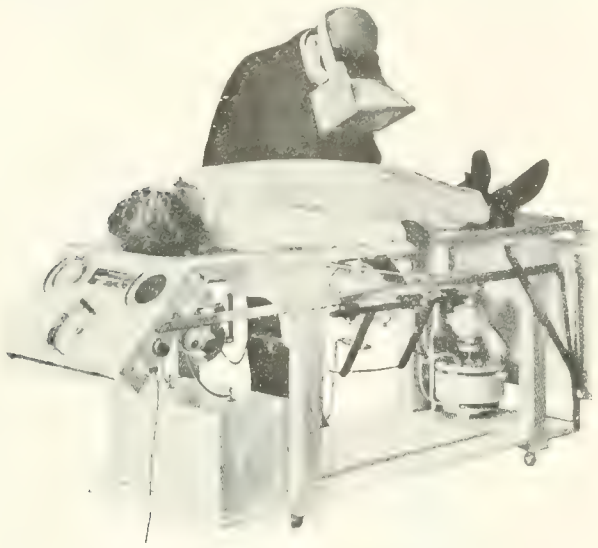


Fig. 4. The Wullyamoz horizontal fluoroscope.

This leaves both hands free for the handling of the instruments. The combination seems to have many points of merit, since an apparatus of this kind can be moved from one part of a hospital to another. As the amount of current required is small, attachment can be made to an ordinary lighting fixture socket.

A Treatment Stand for the Coolidge Tube

With the advent of the Coolidge x-ray tube, capable of producing a ray of definite strength and penetration, and unvarying in its power from day to day, treatments generally classed as "deep" roentgentherapy have received a decided impetus.

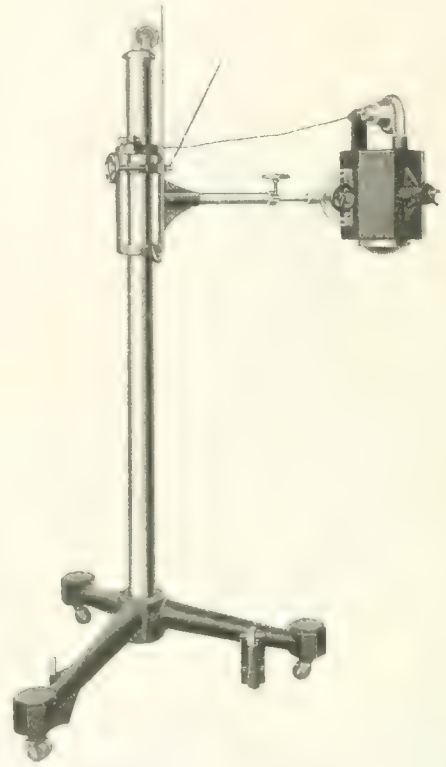
The chief barrier to roentgentherapy is the skin. Emanations from an x-ray tube consist of a bundle of rays of various degrees of strength, from the hardest, most penetrating rays to the softer, secondary ones. In "deep" roentgentherapy it is necessary to concentrate the hardest rays, and in some way diffuse the softer rays in order that the skin may not be affected to any dangerous extent. When treatments of considerable length are indicated, it is also necessary to use the so-called "cross-fire irradiation" method, which consists of subjecting the part under treatment to the roentgen ray through several different ports of entry, thus lessening the damage to the skin at any one point.

The Coolidge tube treatment stand has been designed with the above features foremost in the mind of the manufacturer. The base consists of a substantial casting, finished in hand-rubbed black enamel. Its size and weight are sufficient to make tipping over an impossibility. Efficient foot locks prevent movement of stand when once placed in position.

The tube column is of novel construction. Ball-bearing rollers prevent binding in any position, and the pulley at the top of the column, inside which the counterweight travels, is also ball-bearing and rotates on a ring of balls. A clamp on the sliding head is so arranged that it grasps the upright securely, and at the same time lifts the ball-bearing from the tube. This procedure does not injure the tube, nor does it put any extra strain on the bearings.

The tube box is constructed of kiln-dried wood, and is mahogany finished. Its octagonal shape brings the walls close to the tube, and makes it easy to handle. The box is hinged, and the tube is easily placed in position.

In order that the tube may be operated for a long period of time without overheating, an arrangement has been perfected which consists of a blower, mounted on top of the box. This is operated by a universal type of motor, and may be used on either direct or alternating current. The



Treatment stand for Coolidge tube.

air is forced around the tube and out through an opening in the opposite side of the cover. This opening is amply protected.

Special aluminum filters and treatment cones are included in the equipment of this stand. The filters are specially made for work of this kind, and are of one, two, and three millimeters thickness. They are made of almost pure aluminum. The treatment cones are also specially adapted to "deep" roentgentherapy. Their construction is designed to prevent the secondary rays from passing the opening, by a lip on the inside, which effectually stops them and turns them aside.

Cross-fire irradiation may be accomplished from any angle, and the tube is placed as near as possible to the part under treatment, which is a distinct advantage in the concentration of the rays.

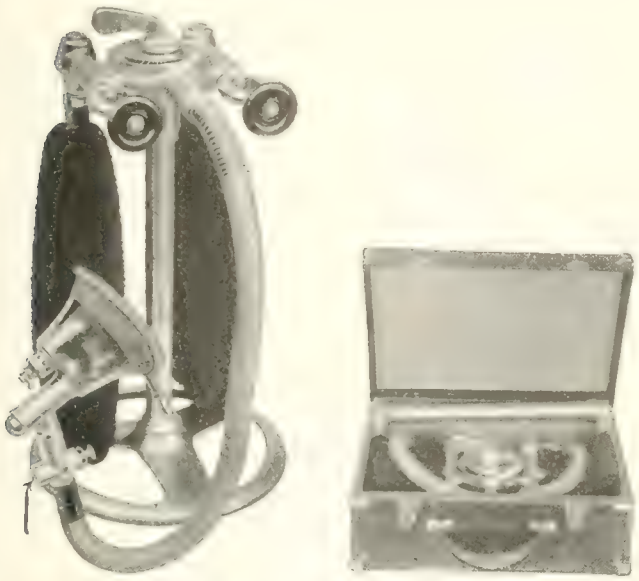
The Clark Portable Nitrous Oxide and Oxygen Apparatus for Anesthesia

Eutocia by means of nitrous oxide and oxygen analgesia has gained such a strong foothold that there has been a universal demand for a light, simple outfit for administering the two gases, that could be conveniently carried to the bedside.

The outfit herewith illustrated has just been perfected,

the manufacturers, A. C. Clark & Co., of Chicago, having incorporated several new features, in addition to the fundamental principles which they use in their larger surgical equipment.

Simplicity of construction and simplicity of manipulation are two of the most prominent characteristics of the outfit. The flow of the two gases, nitrous oxide and oxygen, is controlled by one handle, so that either of the gases can be administered in its pure state or combined in any desired proportion by a single turn to the right or left. All superfluous valves are eliminated, automatic arrangements supplanting them.



Clark baby gas apparatus. At left it is shown assembled; at right packed in case.

The mixing chamber is the most important feature of the outfit, being developed to effect a thorough interpenetration and expansion of the gases, the Clark people having discovered that the greater the expansion and the more thorough the mixture, the more intensified is the action of the gases and the more efficient and tranquil is the analgesia or anesthesia. In this mixing chamber the gases are "rubbed" together three different times. The dial and one handle control are mounted on the mixing chamber.

The manufacturers maintain that every nitrous oxide and oxygen apparatus should have two bags, an individual bag for nitrous oxide, and one for oxygen, so that at no time can the oxygen become contaminated with nitrous oxide or carbon dioxide, and the oxygen will at all times be 100% pure for emergency and definite mixtures. In obstetrics this is important, as it is often necessary to administer pure oxygen to the baby through the mother.

The pure oxygen, with this two-bag arrangement, can be administered instantaneously by a slight shift of the one handle control.

The automatic feeder (indicated by the arrow in the cut) is another new creation by which the patient can self-administer the gases and automatically shut them off. This is especially important in obstetrics, as it does not require the attendance of an operator throughout the period of labor. By pressing the plunger with finger the patient releases the gases, and releasing the finger the plunger springs back and automatically shuts off the supply. Another big advantage is that the tube is always filled with gases, thereby conserving the amount and providing immediate supply to the patient, which is very important, since the pains generally advance quickly.

The outfit holds one cylinder of nitrous oxide and one cylinder of oxygen. When a cylinder is taken off for changing purposes, a heavy automatic valve springs shut, so that the gases in the bags or in the other cylinder cannot escape.

The portable Clark gas outfit is constructed mostly of aluminum and pure gum rubber parts and either the face or nasal inhaler is supplied.

Its complete weight is only 10 pounds. The case to enclose it measures 6x12x16 inches, and the weight of outfit and case is 15 pounds.

The Halverson Electric Instrument Sterilizer

Instrument sterilizers which are heated by gas have nothing to prevent them from becoming injured or ruined when they are allowed to run dry while they are in use. Some of the electrically heated sterilizers are supplied with safety fuses of fusible metal which overcomes accidental burning out. The sterilizer illustrated here, however, is equipped with a contact plug, which automatically breaks the contact and shuts off the current as soon as the water in the receptacle is exhausted. An additional safeguard is a small red signal light which is placed out of the way on the bottom as a silent reminder that the current is on. The tray on which the instruments are placed is lifted and held up automatically when the lid is raised and consequently both hands are free to work with. The tray with the instruments on it can, however, be lifted out and taken to the operating room if this should be desired.

The manufacturers state that boiling water can be had in eight minutes and that the apparatus consumes less current than other electrically heated sterilizers, for the reason that three heats are provided. After the water has been brought to a boiling point it can be maintained at that temperature by the expenditure of a small amount of current. The handles are placed on each side of the lid and out of reach of escaping steam. The sterilizer is made in three sizes and can be attached to the 110-volt current, either direct or alternating.

Halverson electrically heated instrument sterilizer.

Construction work has been begun on Pavilion No. 2, also on a hospital building at the State Sanatorium for Tuberculosis, Norton, Kas. Plans are being made for a more modern sewage disposal plant at this institution.

THE HOSPITAL KITCHEN

Any questions regarding equipment or other matters connected with the kitchen and dependent departments of food storage and service will be answered in this department. Address communications to The Modern Hospital, Kitchen Department, Metropolitan Building, St. Louis.

Butter Cutters

The economy of using a butter-cutting machine instead of cutting the portions by hand is so obvious that it hardly requires discussion. A pound package of butter can be divided into a given number of even pieces of the same thickness and area only by the use of cutting wires set so as to give the desired result.

The wastage of butter is a very serious item and can only be obviated by serving a uniform pat of a size sufficient to satisfy the average consumer.

When butter is purchased in packages a brick can be set on a platform and four cutting wires forced through it longitudinally to make four parts, the necessary number of wires being forced through it horizontally to divide it into from 24 to 48 or even more pats. There are machines on the market with and without mechanism to accomplish this, but no mechanism is really necessary and no increase in speed can be attained by it.

It is in the case of tub butter, which, being cheaper than the package variety, is more desirable where quantities are used, that the question of making the saving by correct cutting comes in, and the most all-round useful machine is the one which will either take package butter and cut that or take any portion of a tub and cut that.

There is a machine which takes the entire tub of butter and cuts it accurately, and this machine can be used where an entire tub is used at once, with some saving of time, although taking up a good deal of space.

It stands to reason that in order to obtain square pats the mold in which the butter is placed before cutting must have straight sides, and that a cylindrically-shaped mold will have different sized pieces cut from the inside and the outside of the cake, so that if even-sized pats are desired this type of machine is to be avoided.

There is a butter cutter on the market in which the mold is of the size necessary to take an ordinary creamery package, or if tub butter is used, the mould can be filled with butter, thus making a cake the same as a creamery package. Owing to its suitability for both tub and creamery package butter a cutter of this type would seem to be most suitable for general utility purposes.

Food Wagons

Food wagons to convey the food from the main kitchen to the ward serving rooms are subject to rough and careless handling, but owing to the weight of the load it is not practical to use a heavily built wagon, and lightness and strength, combined with protection from bumps and careless handling, together with easy and durable running gear, are the things which must be taken care of.

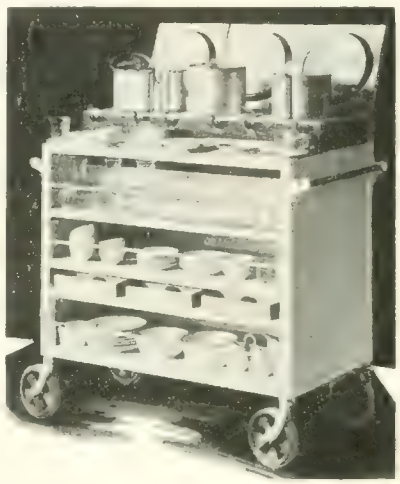
The body of the wagon should be insulated everywhere, except the sliding doors, to keep in the heat, and this object is best attained in a body built of two rigid sheets of metal on an angle iron frame; the joints should all be welded and sheets of asbestos packing used for insulation. As various things have to be carried on the top of the wagon the top must have a rail around it, and in the best modern types of wagon this is welded at all the joints so that breakage is practically impossible.

In order to protect the door jambs and walls of the hospital from injury it is always advisable to cover the corners of the body with thick rubber cushions, which, together with rubber terminals on the handles, give ample protection from careless bumping.

The best running gear is the auto axle with double ball bearings on the wheels and ball races on the stems, which insures the easiest possible running and greatest durability.

Food wagons built on approximately the above specifications are giving excellent service.

It is possible to place electric heating units in the food



Type of food wagon in use at Ford Hospital, Detroit, Mich.

wagons, which can be connected to a plug at either end of the journey, thus ensuring the food being kept hot; but as in practice the food is placed in steam tables in the serving room before being served, this refinement is hardly necessary except possibly where a steam table is not available where the serving is to be done.

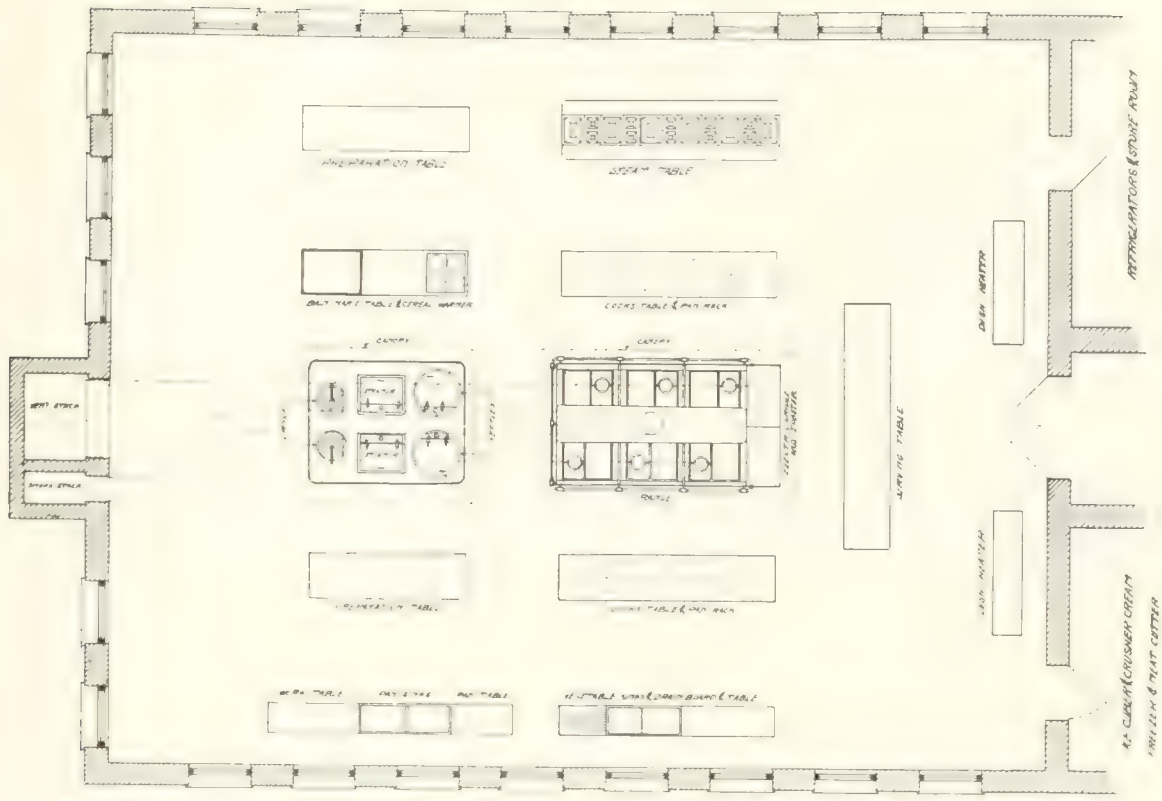
The latest thing in food wagons is illustrated above. These have been put in use in the Ford Hospital, at Detroit, Mich. The top of this new wagon contains what is practically a fireless cooker, containing three holes for single, double and triple aluminum receptacles, which are placed in well insulated holes with insulated lids, thus insuring the retention of temperature. The lower shelves of the wagon are open on one side and are available for plates, bottles, etc.

With a wagon of this kind the food can be served direct to the patient from the wagon piping hot, and in many instances these wagons will doubtless fill a want.

Kitchen Equipment Plan for a 300 to 350-Bed Hospital.

BY F. E. SCHWEIKERT

The plan shown herewith shows a kitchen equipment of ample capacity for a 300 to 350-bed hospital and the necessary help connected with it. It is so arranged that all the equipment is sufficiently far away from the walls to allow for absolute cleanliness.



Plan of kitchen equipment for a hospital of 300 to 350 beds. Designed for THE MODERN HOSPITAL by P. B. Schweikert.

The room shown in the plan would have to be not less than 48x60 feet, and the vents should have an area of not less than 20 square feet, with a smoke stack with an area of 4 square feet.

In this plan the room containing the ice cuber and crusher, ice cream freezer, vegetable peeler and meat chopper is not shown, as this was shown in detail in the plan in the September issue.

The center range shown is 12½ feet by 8 feet and is covered by a canopy. At one end an electrically heated griddle and toaster is shown, which is advisable where the cost of electricity is low, but can be equally well replaced by a gas-heated appliance. These ranges should be of the heaviest type.

For the service of the cooks, a cooks' table with pan rack over it is provided at each side of the range and a serving table faces the dish heaters located on each of the exit doors, which is wide enough to allow the easy passage of the food wagons.

The steam work is taken care of by two 60-gallon steam-jacketed stock kettles and two four-bushel steamers. Back of these two are two 30-gallon institution urns. Over all these appliances is a canopy connected to the vent duct from the ranges and carried to the vent stack.

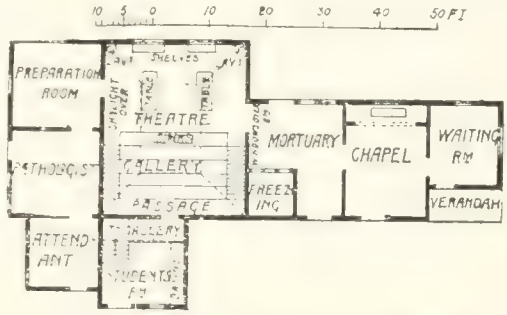
The institution urns are suggested on the presumption that the coffee service will be handled by coffee pots loaded on food wagons. Should a cup service be necessary, these urns would be omitted and a battery of urns installed at the other end of the room close to the door. In fact, where the dining rooms for the staff are close to the kitchen, a supplementary battery of urns for this service will be found useful.

On one side of the steam apparatus a preparation table is provided and ample sink accommodations for pans and vegetables. The service is taken care of by a 14-foot steam table, a bain marie, and a cereal cooker.

The floor spaces between the various appliances are such as to give ample room for working, without being so large as to cause unnecessary steps.

Pathological Block of Adelaide Hospital of South Australia

This latest addition provides the Adelaide Hospital with a complete department for pathological work. The post-mortem theater contains two tables and has accommodations for 58 students. The walls of this large room and those of the mortuary and chapel are lined to the height



Adelaide Hospital, pathological block. Ground plan.

of six feet with white tiles, above which is a hard cement. On one side of the theater is the mortuary, with a freezing chamber for nine bodies, a mortuary chapel and waiting room; on the other is situated the pathologists' laboratory, with the attendants' room and a preparation room adjacent to it.

A Definition

"Pa," asked Johnnie, "what is a pathologist?"

"He's a man who lays out paths in the park and elsewhere, my boy—now don't bother papa any more; he's busy."—The Medical Pickwick.

The Kansas City General Hospital.

AN EXAMPLE FOR SOUTHERN HOSPITALS

Kansas City General Hospital Finds Solution for the Problem of Segregating Colored Patients

The story of what is known as the colored department of the Kansas City General Hospital at the present time, superintended, supervised, nursed and attended by a staff of colored physicians, surgeons and nurses, dates back for its beginning to the year 1908.

In October of that year the new general hospital was finished and ready for occupancy. The mayor of the city and the hospital board, being strong believers in race segregation, insisted that the colored patients of the hospital be kept in the old building. This was done, the white patients being moved to the new hospital. Accordingly, for the next couple of years, the colored patients were nursed by white nurses in training under a white supervisor, and had the services of the same physicians and surgeons who were on the staff of the general hospital.

There was in the city a fairly able colored physician who was quick to see the advantage to his race which a distinct negro hospital would give, and he constantly urged everyone of influence to make the institution colored in all departments.

About the year 1910 the hospital and health board appointed a staff for duty for the colored department over the colored physicians and surgeons, who were called assistant attending physicians. These physicians came conjointly with the white staff and began gradually to get into the work. They assisted in operations, and often operated in cases where the chief of staff would allow it.

The next step was the beginning of the training school for colored nurses. In October, 1911, the first ones came. There were employed in addition to the first five pupil nurses two graduate colored nurses. These graduate nurses were shortly given authority as supervisors, and as colored pupil nurses became proficient, the white nurses were withdrawn.

The next step was the appointment of colored interns, instead of white interns, who formerly came to this department from the general hospital, each one serving three months; young negro physicians came from schools in the east and proved themselves able men. This was about as far as the matter had progressed, and no one seemed to care very much whether the final change was made or not. Early in 1914 there was appointed to the hospital and health board, Mr. Thomas M. Finn, now the president, who was strongly in favor of giving the colored people a chance to run their own hospital, so in October of that year, a colored superintendent was appointed, Dr. William J. Thompkins, and a colored supervising nurse, Mary K. Hampton. There were at this time seventeen pupil nurses and two post-graduate nurses. There were six interns and a well organized staff of colored physicians looking after the medical and surgical diseases as well as some of the specialties. The members of the staff at the general hospital served each a period of two months at the old hospital, and supervised and instructed the colored staff in their work. The nursing department is under the direction of Miss Mary I. Bustard, our superintendent of nurses, and the nurses in the colored training school have the same course of didactic and practical training which is given the white nurses in this institution. They are also given a diploma at the completion of their three years' course.

The old building has been overhauled, the plumbing renewed, it has been repainted, and a separate home for colored nurses has been provided. Further work is contemplated in the way of improving conditions by providing sun porches for the tuberculosis cases. The work in all departments has proceeded as harmoniously, economically and efficiently as before the change, and as far as we are able to determine, the arrangement is highly satisfactory to both races.

GEORGE P. PIPKIN, M. D.,
Supt. Kansas City General Hospital.

New York Hospitals to Use Motors Only

Motor ambulances have recently replaced the horse-drawn vehicles at all of the city hospitals in Manhattan and the Bronx, New York City, including the Bellevue, Gouverneur, Harlem and Fordham institutions. Efficiency and economy are given as the objects of the change. It is expected that territory may be covered more speedily with the automobile ambulances and that fewer ambulances and employees will be needed.

Fig. 1. [illegible] ambulance [illegible] Note [illegible] arrangement and closet in side.

NEW AMBULANCE FOR THE WAR

American Builders Are Sending a Four-Patient, Ten-Passenger Car to Italy

The outbreak of the European war found all the belligerents, excepting Germany, poorly prepared; and even Germany, with her maximum of preparedness, could not have realized the huge proportions of the war to come. Men have been killed in hundreds of thousands, and wounded in even greater numbers in a single "drive."

War offices are notoriously prone to think in terms of fighting, and as we found in our own pigmy Spanish-American war, the care of the wounded, and the hygiene and sanitation of the line, seems always to be forgotten or ignored. So it was in Europe, and one of the first things that had to be organized, almost out of nothing, was a scheme for gathering in and caring for the wounded.

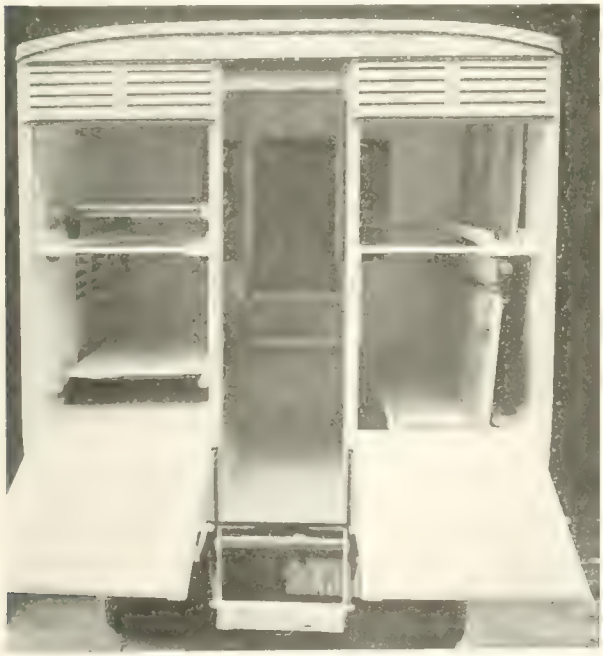


Fig. 2. Arranged for two recumbent patients and five sitting patients. Note lavatory in front.

To the British war office this was so serious a matter that a prize of $5,000 was offered for the best design of a field ambulance.

Italy seems to have gone about the problem differently, and in connection with other methods, gave orders in this country for field ambulances. The car pictured in the illustration was one of those purchased.

The ambulance has solid wooden panels. It is 8 feet 2 inches long back of the driver's seat, and 5 feet 8 inches wide inside; the height in the center of the passageway is 5 feet 9 inches. There are four permanent glass windows on each side; also two ventilating blinds on each side. At the rear there are two ventilating blinds and two doors; these doors drop and make a support when loading the upper stretcher. The passageway at the rear is left open, but is supplied with a spring roller curtain, working in grooves, so that in stormy weather it may be closed to the bottom or closed to any height desired. Beneath the two doors there is a locker space, which is opened from the outside of the body. The rear is also furnished with a step, which folds. The front of the body is supplied with a rain-vision wind-shield and has fore doors. The driver's seat is upholstered with spring cushion and lazy-back of leather and is capable of carrying two people.

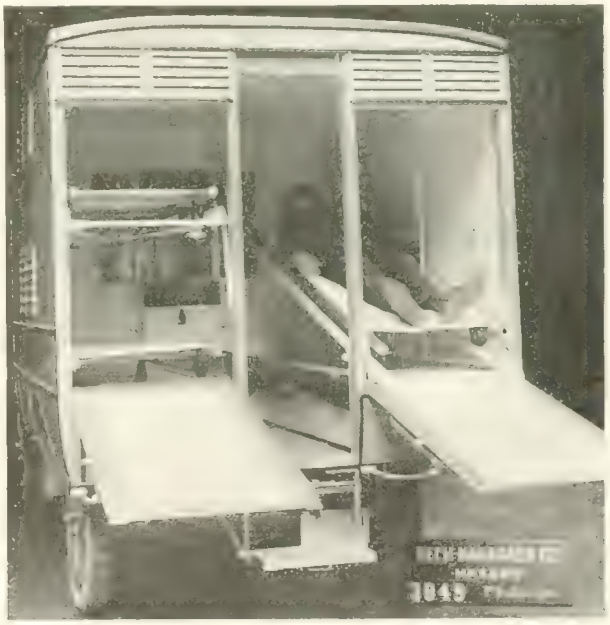


Fig. 3. Arrangement for getting patient into upper berth.

The interior of this forward part is finished in the usual manner of vehicles of this kind. The hood, extending out over the driver's seat, is made of considerable depth so that there is space for lockers. There are three lockers in this hood; one in the front and two on the sides.

The interior of the body is so arranged that it will carry four stretchers and allow seating for physician and one nurse. Two patients can be accommodated on stretchers, and five persons in a sitting position, or ten people in the sitting position if stretchers are not used. When stretchers are not in use this platform is raised, and forms the seat, and the space back of the seat is arranged so that stretchers not in use can be carried. When this platform is in position for the stretcher the stretcher is simply pushed in from the rear.

The upper stretchers are carried on a pair of adjustable

skids. When the upper stretchers are not in use they are carried on the side of the ambulance, entirely out of the way, so that they do not interfere with the seating of the passengers. The stretchers used are the regulation army stretchers.

There is one locker under each of the lower berths, which open from the aisle. In the front, beside the driver on the right-hand side, is arranged a compartment which has a hot water tank and cold water tank. The hot water is heated from the exhaust. There is a drop glass immediately back of the driver's seat in the center of the body. In the center of the aisle there is a seat for the physician or nurse. This seat forms the back, or the door, which closes the compartment in which the water basin is carried. This compartment, back of the seat, contains fau-

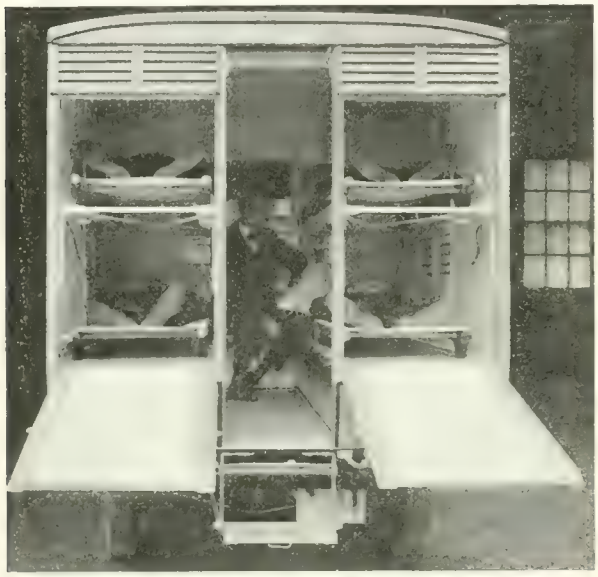


Fig. 4. Arranged for four bed patients and nurse.

cets and a basin, also a waste pipe. When this basin is turned up the water drops in the waste pipe and is carried through the bottom of the body to the ground.

On the left-hand side of the front is one large locker that can be divided into compartments to suit requirements. There are three electric dome lights, one in the forward part over the driver and two in the interior of the ambulance; and four electric lights on each side, arranged in the sides of the body so as to give light in each of the berths when occupied. Two electric fans can be placed in a position where they will properly cool each of the berths. One Pyrene fire extinguisher is provided also, and two fireman lanterns to be placed outside for use at night in field work. The lanterns are oil-burning.

The interior of the ambulance is metal-finished, and the floor is covered with linoleum.

The body is placed on a 30 horse power four-cylinder White chassis. It has electric lights and self starter. The fans and electric lights in the body are furnished with power from the battery of the chassis.

Germans to Establish More Hospitals in Belgium

German physicians and officers have recently completed a tour of Belgian cities for the purpose of inspecting municipal and other buildings that would lend themselves to conversion into large hospitals. Complete equipment has been ordered from Germany.

HINTS FOR HOSPITAL SUPERINTENDENTS.

Have good coffee in your hospital. There is a good deal in starting out with coffee of a good grade and blend, but the best coffee ever grown can be easily spoiled in the making.

How many superintendents have time, day in and day out, through the year, to go to places, take plenty of recreation and get away from the institution for several hours a day? Show me a hospital superintendent who is on the jump all day, late and early, and I will show you a superintendent who is not giving the hospital the best service possible.

Learn to delegate work; keep other people busy. You should know what your kitchen is doing, but that doesn't mean you should shell peas for dinner; you should see that your house is kept clean, but that doesn't mean you should wield a mop.

If the general of an army got into the trenches, who would do the thinking and planning? It is the orchestra leader's business to wield the baton that calls forth melody, harmony, rhythm and tone, but he can't afford to play the piccolo.

It may not be necessary or desirable to work under written or printed rules for the superintendent or the medical staff of the hospital. But it is certainly imperative to have definite rules, drawn out in the last detail for the guidance of interns and nurses, and rules of technic for the medical and surgical work. The superintendent of the hospital is the best judge of rules for interns, and each institution must be a law unto itself concerning these rules; but they should be specific and reasonable. The head of the training school is the best judge of rules for the conduct of pupil nurses, but a set of these rules should be inaugurated if they are not working now.

The best way to get rules of technic for the various services in the hospital is for the superintendent to make a skeleton form for each service, making them as he thinks they ought to be, and then put them up to the medical staff of each service for them to pick to pieces and finally adopt. These rules are the sheet anchor of the hospital insofar as its technic is concerned. A hospital without a definite and specific technic for doing things cannot have any kind of decent medical service, cannot train interns and nurses, and cannot get good results.

Take enough time off duty to get away from the job so you can take a bird's-eye view of it from a distance. The general of an army doesn't ride at the head of a regiment in a charge; he stands back on a hill somewhere with field glasses to survey the whole battle front. He would lose the fight if he gave his individual attention to details. Take walks, go to a ball game, take in the "movies." There will be moments when you can make little mental sketches of your hospital work; and you will see some things as they really are instead of as they have appeared to you while standing close beside them. Especially will you do well to think about your associates in the work: Are they doing their duty by the institution and to you? Are you doing exact justice to them? Are you always fair to them? Have you "got it in" for anyone, and is your attitude fair and generous? A walk in the park alone, with the sunshine, and the birds and flowers and Nature, will do wonders to oxidize the blood, carry off the waste products, including any little meannesses that may have infected you, and give you a fine, wholesome survey of the world, especially your part of it.

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NEWS OF THE HOSPITALS AND SANATORIUMS

A public hospital was opened at Harrodsburg, Ky., October 22.

A new isolation hospital has recently been opened at Lincoln, Neb.

A project for a public hospital has been launched at Holland, Mich.

Drs. Miller and Cartwright, Valley, Wash., are building a hospital.

The Grace Hospital, Detroit, Mich., is planning a new children's ward.

A movement for a public hospital has been inaugurated at Coldwater, Mich.

The Dodgeville General Hospital, Dodgeville, Wis., is to be enlarged and improved.

The J. N. Adams Memorial Hospital at Perrysburg, N. Y., has a new fifty-bed children's pavilion.

The city authorities of New Bedford, Mass., are considering a plan for the establishment of a municipal hospital.

A state farm for inebriates has been opened this fall in connection with the Norwich State Hospital, Norwich, Conn.

The Nassau Hospital, Mineola, L. I., is to have a new $25,000 maternity ward as a gift from Mrs. Herbert L. Pratt.

The directors of the Oklahoma Baptist Hospital, Muskogee, have announced plans for an addition to cost $40,000.

The Charity Hospital, New Orleans, established a social service department November 1, with Miss Martha Pace in charge.

Efforts are being made at Ardmore, Okla., to organize a stock company for the purpose of building a fifty-room hospital.

The Edward W. Sparrow Hospital, Lansing, Mich., contemplates building a substantial addition in the near future.

Examination of every person for incipient tuberculosis is recommended in a report of the Detroit Tuberculosis Sanatorium.

A volunteer organization at Haddonfield, N. J., known as the Loving Service, proposes to establish a hospital in the near future.

The building of an annex to St. Edward's Infirmary, Fort Smith, Ark., to cost $100,000, is contemplated by the sisters in charge.

A new children's ward, with a capacity of 20 beds, and with all the modern conveniences, will soon be opened by the York Hospital, York, Pa.

Steps are being taken at Flint, Mich., to provide funds for the enlargement of the Hurley Hospital, a municipally controlled institution of that city.

An addition to the Santa Fe Railway Employes' Association Hospital at Temple, Tex., erected at a cost of $50,000, will soon be ready for occupancy.

Miss May Moore Russell has been made superintendent of the Jewish Hospital in Cincinnati, succeeding Miss Mary Hamer Greenwood, who was injured by being thrown

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Streptococcus	125	250	500	1000 million
Pneumococcus	125	250	500	1000 million
M. catarrhalis (group)	125	250	500	1000 million

Literature describing method of treatment and dosage sent on request.

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from a horse while on her vacation in the mountains of North Carolina last summer. Miss Russell has been Miss Greenwood's assistant at the Jewish Hospital for twelve years.

The Burrell Memorial Hospital Association has been organized at Roanoke, Va., with S. F. Williman as president and Dr. J. H. Roberts secretary.

A proposition to issue bonds in the sum of $30,000 for the erection of a county tuberculosis hospital was carried at an election in Steuben County, N. Y., November 4.

Prominent physicians, ministers and business men of Houston County, Ga., are active in a movement for the erection of a $30,000 hospital in the town of Dothan.

Miss Mary McIntyre, of Chicago, has been appointed superintendent of the Mary M. Packer Hospital, Sunbury, Pa. She succeeds Miss Estella Wolmesdorf, resigned.

The Dominican Sisters' of the Sick Poor, New York City, plan to build a hospital accommodating 250 patients. The mother house of the order is located at Sparkill, N. Y.

The Denver (Colo.) Sheltering Home for Jewish Children is erecting a building to house fifty children. This institution will also build a small hospital and detention annex.

It is announced that construction work on a new home for the Columbia Hospital, Milwaukee, will be started at an early date. The cost of the building is estimated at $300,000.

A ten-bed hospital has been opened at Huntington Beach, Cal., by Misses Stella M. Fowler and Martha Peters, graduates of the Illinois Training School for Nurses, Chicago.

The voting of a tax to meet the conditions of the will of a late resident of the town who left $45,000 toward the establishment and maintenance of a hospital, is being agitated in Princeton, Ill.

Dr. Joseph Simecek, of Swanton, Neb., has subscribed $10,000 toward the establishment of a hospital in Wilber, Neb., on the condition that citizens of Wilber raise the necessary additional sum.

Mrs. Frank Osborne has been appointed superintendent of the county hospital at Visalia, Cal. Mrs. Osborne's husband, who died a short time ago, was at the head of this hospital for several years.

A site has been donated at Miles City, Mont., for a Methodist deaconess hospital and citizens are cooperating with the church in an effort to raise $30,000 for the erection of a suitable building.

A new city hospital was opened at Columbus, Ga., in October. The building cost $100,000. Mrs. McDaniel, formerly of the Taliaferro Hospital of Savannah, Ga., is in charge of the institution.

Salt Lake City opened a new emergency hospital in November. Miss Teressa M. Stephens, a native of Salt Lake City, who received her training in a hospital in Boise, Idaho, is the nurse in charge.

Dr. Robert Lippincott Walter, who was formerly associated with his father in the conduct of Walter's Sanitarium, Wernersville, Pa., has opened a private sanitarium at Doylestown, in the same state.

The patients of twenty hospitals in Boston were recently made to forget their ills temporarily when 35,000 roses of the finest varieties were distributed to them through the generosity of a local florist.

A slip descended from the famous Penn treaty elm tree brought $60 when auctioned for the benefit of the Children's Hospital, Philadelphia, in the recent campaign for funds conducted by that institution.

The government hospital built at Fort Yates last year to care for the Indians on the Standing Rock Reservation, will be opened this fall. Dr. Allen, the government physician at the reservation, will be in charge.

The Society for the Relief of Destitute Blind, New York City, has filed plans for a three-story asylum to be erected on the west side of Grand Boulevard, between 193d street and Kingsbridge Road. The structure will cover a plot

S

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OF course you want your dumbwaiter to be easy-running and nearly noiseless. But above all you want it to be always ready—always in easy-working condition. A dumbwaiter that is out of commission part of the time is a nuisance—not a convenience. For more than twenty years past we have been devoting our time and effort **exclusively** to the making of **high-grade** hand-power dumbwaiters and elevators. The qualities that we have been developing in **Sedgwick** Dumbwaiters are easy operation, silent running, and dependability. And we have attained them to a degree that will be remarkably satisfying to you, if you make a **Sedgwick** Hand-Power Dumbwaiter a part of your hospital equipment. It is a fact—not a mere trade slogan—that **"Sedgwick service satisfies."**

Our booklet on "Dumbwaiters and Elevators in Modern Architectural Practice" will show you how to differentiate a good dumbwaiter from a poor one—how to buy dumbwaiter service. Write us today for your copy.

Sedgwick Machine Works

Specialists in Hand-Power Dumbwaiters and Elevators

218 Liberty Street, New York

S

Serve apple butter made the pure, clean Lippincott way

If you could see Lippincott kitchens and Lippincott methods, the extreme measures of sanitation would surprise you.

A little of what you would see is shown by the photograph above—floors and walls of snow-white concrete, kettles of shiny, spotless copper, a flood of purifying sunlight and air.

But it doesn't show the methods observed in the actual making of the apple butter—how only the choice, sound apples are hand-selected from the best grades; how modern cider presses extract the juice, only the first pressing of which is used; how sugar and spices are tested for purity and quality; how rigid inspection systems watch vigilantly every step in the process.

The hygienic standards of hospital dietetics demand purity above everything else. Serve Lippincott Apple Butter—*and be sure.*

Mail coupon for FREE 8-lb. sample

Many important hospitals, recognizing the hygienic and dietetic advantages of apple butter, have given it a place on the hospital menu. If your hospital is one of such, or if you should like to try it out, *we shall be glad to send you FREE an 8-lb. sample of Lippincott Apple Butter,* upon receipt of the coupon properly and satisfactorily filled out.

Lippincott
TRADE MARK

Apple Butter

THE LIPPINCOTT COMPANY, Cincinnati, Ohio

The Lippincott Company Cincinnati, O.

I should like to test the merit of Lippincott Apple Butter for Hospital use. Please send me, express prepaid, a full-size 8-lb. can.

(Name of Hospital) _____

(Number of Beds) _____

(Your Name) _____

(Your Position) _____

(City) _____ (State) _____

194x196 feet, and is estimated to cost $250,000. M. L. & H. G. Emery are the architects. The society's present home at Amsterdam avenue and 104th street is offered for sale.

Mr. Werner Roehl, for the past nine years superintendent of the German Hospital, San Francisco, has been appointed superintendent of the Queen's Hospital, Honolulu, H. I., and assumes his new duties December 1.

The New Goodhue County Tuberculosis Sanatorium at Canon Falls, Minn., has been opened with Mrs. J. R. Geraldson in charge. Mrs. Geraldson was formerly head nurse at the Wisconsin State Sanatorium, Wales, Wis.

At a recent meeting of the Mississippi State Board of Graduate Nurse Examiners, Miss Jennie M. Quinn, superintendent of the Hattiesburg Hospital was reelected president, and Miss Mary H. Trigg, of Greenwood, secretary-treasurer.

The Grand Rapids (Minn.) Commercial Club has started a campaign to provide a site for a county hospital. The sum of $20,000, appropriated by the county commissioners two years ago, is already available for the erection of a hospital building.

At the expense of George L. Birmingham, a philanthropist of Kansas City, Mo., musical concerts are to be held on every floor of all the public hospitals of that city every Sunday morning, provided the patients enjoy the music and appear to be benefited by it.

Dr. C. A. Files, who operates a private hospital at Van Wert, O., assumed the superintendency of the District Tuberculosis Hospital at Lima, O., November 1, having been appointed to succeed Dr. J. R. Johnson, who will take up post-graduate work in New York City.

The Northern Pacific Beneficial Association, an organization of the employees of the Northern Pacific Railroad, with headquarters at St. Paul, will open a branch hospital at Livingston, Mont. The main hospital of the association is located at Missoula, Mont.

Dr. Leo Loeb, for the last five years director of the pathological department of the Barnard Skin and Cancer Hospital at St. Louis, has been appointed to a newly established chair of comparative pathology in the Washington University Medical School, that city.

A new, modern building for women patients was opened at the sanatorium of the Jewish Consumptives Relief Association, Duarte, Cal., October 24. It was erected by the ladies' auxiliary of the association and is the third cottage for which funds have been raised by this body.

A plan to engage qualified persons to visit the children's ward of the Conemaugh Valley Memorial Hospital twice a week to teach the youngsters new games, tell them stories and otherwise brighten their hours, is being considered by the Women's Association of the institution.

Spokane County, Wash., has opened a sanatorium for tubercular patients. The institution is housed in a new building erected and equipped at a cost of $80,000. It is located near the city of Spokane and is to be known as "Edgecliff Sanatorium. Eighty patients can be cared for.

Mr. and Mrs. F. I. Coutant, graduates of Dr. Benjamin F. Bailey's hospital at Lincoln, Neb., and of the Pennsylvania Orthopedic Institute and School of Mechano-Therapy, Philadelphia, have been engaged to take charge of the hydriatic department of the Barnes Hospital at St. Louis.

A new $85,000 fireproof building for the Citizens' General Hospital, New Kensington, Pa., was opened last month, with Miss Irene Murdock in charge as superintendent. The dimensions of the structure are 120 by 75 feet, and it is four stories high. Eighty patients can be accommodated.

A new home has recently been opened for the hospital-sanitarium conducted by Dr. C. S. R. Engelhardt at Lansdale, Pa. The building is of white stone, in the colonial style of architecture, and cost $30,000. It occupies a site in the center of a 200-acre farm and commands a view of the country for miles in every direction. Dr. Engelhardt, the feminine founder of the institution, is a firm believer

50
Bran Foods
All Effective—All Inviting
Made from Pettijohn's

Pettijohn's products contain the right sort of bran—in flake form and tender.

Each contains 25 per cent bran in dainty combination.

The two supply the basis for fifty kinds of bran foods, and all of them delicious.

They apply wherever you think whole wheat better than white flour. Or where you want some form of bran food served with many meals.

You will find that they meet in every way your ideas of bran food.

Pettijohn's

Two Bran Foods

Pettijohn's Breakfast Food—A soft wheat rolled into luscious flakes, hiding 25 per cent unground bran. A morning dainty liked by everyone. 15c per package.

Pettijohn's Flour—Fine patent flour mixed with 25 per cent special bran, largely in flake form. To be used like Graham flour in any recipe. 25c per large package.

The Quaker Oats Company

Chicago (1065)

ETHER PRO NARCOSI

This Ether Sulphuric for anesthesia is prepared by a special process of purification by which all of the impurities that are ordinarily found in Ether are entirely removed.

Our product has a boiling point of 35° to 36° Centigrade, a specific gravity of .713 to .715 at 25° Centigrade; it leaves no residue on evaporation and will show negative results when tested for impurities.

OUR CLAIM IS THAT NO ETHER EQUAL IN PURITY HAS BEEN OFFERED TO THE MEDICAL PROFESSION UP TO THE PRESENT TIME.

ALBANY CHEMICAL COMPANY
ALBANY, N. Y.

An Interesting Letter

A nurse in a prominent New York Hospital writes this unsolicited letter:—

"I purchased a white 'DIX-MAKE' uniform last week and am so pleased with it that I will get six more. I am more than delighted with it and have been showing it to other nurses who are enthusiastic over it. Shall continue to exhibit the beautiful garment. It fits me perfectly."

Many leading hospital authorities and thousands of well-dressed nurses have expressed preference for Dix-Make Uniforms, because the perfect tailoring, good fit and smart appearance make them especially desirable.

Sold by leading stores. Our label on every garment is for your protection.

Write for Blue Book of styles and prices

HENRY A. DIX & SONS CO.,
Dept. C, Dix Bldg., New York

Makers of
Dix-Make UNIFORMS

A MACHINE that cuts raw meat fine in five minutes without mashing it. The meat retains all its juice and its full nutritive value.

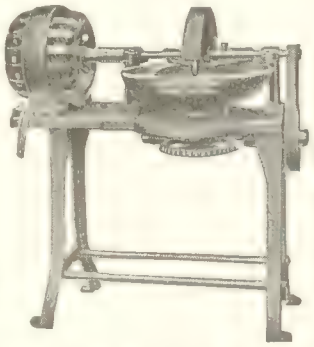
Such is

The Buffalo Meat and Food Chopper

It saves from 200 to 600 per-cent in time and cost of labor

IT will cut cooked meat for hash in three minutes; vegetables for soup in two minutes.

WITH the Buffalo Meat Cutter every useful fragment is utilized instead of being wasted.

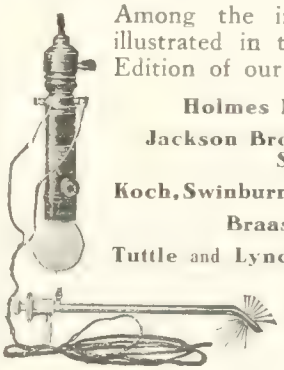


We will ship this machine on thirty days' trial, and pay freight charges both ways if not acceptable.

JOHN E. SMITH'S SONS COMPANY
51 Broadway, BUFFALO, N. Y.

Electrically Lighted Surgical Instruments

THESE instruments are constructed after the suggestions and designs of eminent physicians, and, being particularly adapted for bedside diagnosis they are especially useful in hospital work. As our instruments are now equipped with tungsten lamps, they can be operated upon our new tungsten battery or upon commercial current by means of our socket current controller or socket cautery transformer.



Among the instruments described and illustrated in the recently issued Eighth Edition of our Catalogue are

Holmes Nasopharyngoscopes

Jackson Bronchoscopes, Laryngeal Specula, etc.

Koch, Swinburne and Young Urethroscopes

Braasch Cystoscopes

Tuttle and Lynch Procto-Sigmoidoscopes

A copy of the Eighth Edition of Catalogue will be mailed upon request.

Origination begets Imitation

For your own protection be sure every instrument is marked "E. S. I. Co."

Electro Surgical Instrument Co.
Rochester, N. Y.

in the beneficial effect of studies in art and nature in the treatment of mental and nervous disorders. Classes in art are a feature of the sanitarium. Horticulture is a prescribed course in certain cases, and the growing of vegetables and flowers is encouraged.

Lansing, Mich., is to have a free public hospital. The will of the late Dr. Julius A. Post, of that city, who died in October, provides that the income from his entire estate is to be used for the establishment and maintenance of such an institution. The property is said to be worth about $100,000.

Besides marking every infant in the institution by pasting a piece of adhesive tape around the wrist, the Denver City and County Hospital is taking the additional precaution of taking an impression in ink of every baby's feet. The footprints are regarded as an infallible means of identification.

The Kansas Sanitarium, an institution operated at Wichita by the Seventh Day Adventists, is making extensions to its plant. A three-story brick addition is now in course of construction and two cottages will be erected in the spring. At present the sanitarium has accommodations for fifty patients.

Rev. C. A. Hultkrans, superintendent of the Bethesda Hospital, Minneapolis, since 1892, is dead. Mr. Hultkrans was born in Sweden in 1859, and came with his parents to Lake City, Minnesota, in 1870. Owing to ill health he had not taken an active part in the administration of the hospital during the last two years.

Patients are being received at the new DuBois Hospital, DuBois, Pa., erected at a cost of $100,000. The hospital is built on the cottage plan, in the colonial style of architecture, and has a capacity of 50 beds. It is in charge of the Sisters of Mercy, who have conducted a smaller institution in DuBois for several years.

The directors of the Iowa Methodist Hospital, Des Moines, are considering extensive improvements at this institution. They first wish to erect a nurses' home, costing about $40,000. Later they hope to replace the older part of the hospital with a modern structure of greater capacity, which it is estimated will require an expenditure of $250,000.

Secretary of the Treasury McAdoo, when visiting St. Louis recently, stated that Congress would be asked at the approaching session to appropriate a fund for the erection of modern quarters for the U. S. Marine Hospital in that city. The Marine Hospital at St. Louis has recently been made the headquarters of the government bureau of rural sanitation.

Dr. C. D. Wilkins, superintendent of the Charity Hospital at New Orleans, is donating $500 of his salary to the institution. The Charity Hospital is the largest institution of the kind in the South, caring for thousands of patients annually, and increasing demands upon it have necessitated a special campaign to relieve a depleted condition of its finances.

In the recent campaign for building funds conducted by the Children's Hospital in Philadelphia, fifty dollars were contributed by convicts at the Eastern Penitentiary. The money was raised in an hour and was accompanied by the message, "Maybe if some of us had been given the right treatment when we were kids, we might not be just where we are today."

The Presbyterian Hospital at Newark, N. J., has purchased two buildings adjoining its present quarters and will spend $20,000 in remodeling the structures and fitting them up for hospital purposes. One of the buildings will be devoted exclusively to charity patients and the other to paying patients. Plans are also being made for the remodeling of the present hospital.

Mrs. Frances A. Worrall, a graduate of the Boston City Hospital, and for six years superintendent of nurses at Cooper Hospital, Camden, N. J., has recently assumed the superintendency of the Lynn Hospital, Lynn, Mass. For the last two years Mrs. Worrall has been engaged in settlement work in New York City. The Lynn Hospital has also a new head nurse in the person of Miss Jessie N. Johnston. Miss Johnston's early training was received at

Coax the Convalescent Back to Health and Strength

There is nothing like a dish of jelly to tempt the appetite of a patient who is recovering from a siege of illness.

Chalmers' Gelatine

is an excellent carrying agent for chicken, broths and small pieces of meat near the bone—too small to be used ordinarily, but rich in nutrition. Your patients will not have to be tempted to eat if you give them food served in Chalmers' Gelatine.

If you could see our bright, sunlit factory at Williamsville where Chalmers' Gelatine is made; if you could see the scrupulous cleanliness that is exercised and the perfect purity of the ingredients that go into Chalmers' Gelatine—then you would know why we claim that Chalmers' is the purest and most nutritious jelly that you could give your patients.

Our new Virginia Recipe Book is just out. It can be secured by mailing three pictures of the Chalmers' girl, cut from the front of the boxes.

United Profit Sharing Coupons in every package—they are good for valuable premiums.

We want you to try Chalmers' Gelatine so that you may know its sparkling purity and tempting delicacy.

JAMES CHALMERS' SONS
Williamsville, N. Y.
H. P. TAYLOR, JR., Sales Agent, Richmond, Va.

H. P. TAYLOR, JR., Dept. B, 18 South 14th Street, Richmond, Va.

Send me new Virginia Recipe Book, for which I enclose three pictures of the Chalmers Girl.

Name _____

Address _____

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Daylighted Hospitals

The operating room of every hospital must have good, clear daylight—perfect light for the surgeons to carry on their delicate work with absolute confidence. That is why

Fenestra
SOLID STEEL WINDOWS
"REG. U.S. PAT. OFF."

were installed in the operating rooms of the City and County Hospital, San Francisco. Note how the light floods the interior of the room shown in the illustration.
The use of Fenestra brings more than correct lighting. Abundant ventilation and absolute fire protection are also secured.
Standard Fenestra units—like those in the picture—can now be bought at a price practically the same as good wood sash. And shipment is made in ten days.
Build this winter. You will get lower prices, quicker delivery and better service.

DETROIT STEEL PRODUCTS COMPANY
Dept. L14 Detroit, Michigan

Surgical—Laboratory—Drinking

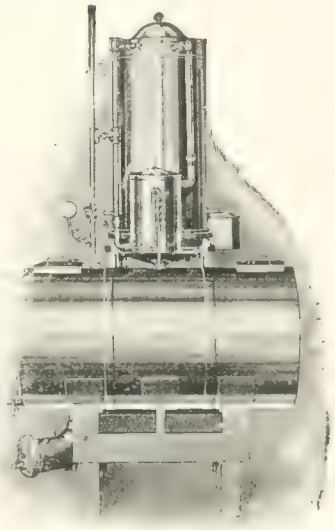
It is economical to combine these particular water needs in a single apparatus investment and single operating expense with a

Kennicott-Polar Water Distilling System

In some of the recent hospitals these highly perfected stills are automatically producing a water that is not only perfectly sterile, but free from all organic or mineral matter—and besides, equal in taste to any of the best known table waters. It is being sold in bottles in hundreds of cities.

These ideal hospital outfits comprise a distilling unit with double storage tanks—one for operating room with temperature control and the cold tank for laboratory, drinking and cooking. The entire storage and piping is easily and thoroughly sterilized as often as desired. The plant is entirely automatic. A size for every hospital or laboratory.

We also build water softeners and filters in any capacity. Write for literature.



THE KENNICOTT COMPANY
1400-1410 Corn Exchange Bank Building CHICAGO

the Plaistow Hospital, London, England. Later she did nursing in India and Canada and at Hamilton, Mass.

The Higgins Memorial Hospital at Olean, N. Y., has a new nurses' lodge, erected at a cost of $35,000. The building is the gift of Mrs. F. W. Higgins, widow of the late Governor Higgins. Accommodations for additional patients will be provided by fitting up the rooms in the main building formerly occupied by nurses. Arrangements are also being made for a special children's ward at this hospital.

A group of new buildings for the Brooklyn Hospital, Brooklyn, N. Y., has recently been completed. The group consists of a pavilion for private patients, a public ward building, a home for nurses and a power house. Two hundred and twenty-five patients will be accommodated. The new structures are located at Raymond street and DeKalb avenue, and are said to be among the finest of the kind in Brooklyn.

The Binghamton State Hospital, Binghamton, N. Y., will ask the state legislature to appropriate $200,000 for improvements at this institution, including a new surgical pavilion, a laboratory for analyzing supplies, an addition to the acute hospital, the enlargement of the laundry building, the renewing of heating equipment and wiring systems, and the furnishing of a building now being constructed to house 300 women patients.

Plans have been filed with the New York City Building Department for a building to be erected on the block bounded by 167th street and Finlay and Teller avenues for the Home of the Daughters of Jacob. The cost of the structure is estimated by the architect, Louis Allen Abramson, at $400,000. The building is to be in the form of a central hub with eight protruding wings. The colonial style of architecture has been followed in the plans.

Dr. Frederick Janney Smith, who has been connected with the Johns Hopkins Hospital for the last two years, first as resident house officer, and lately as resident physician in charge of the private wards, recently received an appointment to the position of superintendent at the Henry Ford Hospital, Detroit, and is now in charge of that institution. Dr. Smith was graduated from Johns Hopkins University in 1909, and from the Johns Hopkins Medical School in 1913. He was one of the honor men of his class in the medical school.

An effort will be made to get a bill through the New York State Legislature at its next session, amending the charter of New York City so that it will be possible to combine the Department of Health, the Department of Charities, and Bellevue and Allied Hospitals into one organization to be known as the Department of Social Service. The consolidation would bring all of the city hospitals under one head instead of three, as under the present system. The city administration is said to be responsible for the project.

Miss Sallie J. Bryant, of St. Joseph, was re-elected president of the Missouri Nurses' Association at the tenth annual meeting of the association, held in St. Louis, October 20, 21 and 22. Other officers were elected as follows: First vice-president, Miss Mary Baird, St. Louis; second vice-president, Miss Anna Barr, Kansas City; secretary, Miss Elizabeth A. Doran, St. Joseph; treasurer, Miss Janette Flanagan, St. Louis. Miss Mary C. Wheeler, of Chicago, chairman of the legislative committee of the American Nurses' Association, addressed the nurses on the establishing of uniform requirements for the registration of nurses in all states. Papers were read by Dr. M. T. Woodruff, Miss Emilie Schmid, Miss Bertha Love, Dr. Gustav Lippman, Miss Julia Stimpson and Miss Marie Brockman, all of St. Louis; also by Misses Anna Anderson, Patricia Cronin, Etta Lee Gowdy, Mary Dodt, and Phoebe Neidenberger, of Kansas City; Miss E. A. Doran, of St. Joseph; and Miss Fannie F. Clement, of Washington, D. C. The Legislative Committee, which was instructed to draft amendments to the state nurses' law, providing that the qualifications of nurses shall include at least one year's high school work or its equivalent, and increasing the registration fee from $5.00 to $10.00, will have for its chairman Miss Charlotte B. Forrester, of Kansas City. The 1916 convention will be held in Kansas City.

Wheat, Rice or Corn Triple-Cooked

Puffed Grains are the best-cooked cereals in existence. For an hour the grains are subjected to 550 degrees of heat. Thus they are cooked and toasted in a most unusual way.

Then a hundred million steam explosions are caused within each grain. Each food cell is blasted by exploding the moisture within it.

The result is whole-grain bubbles, with every granule fitted for easy digestion. Corn Puffs are pellets of corn hearts exploded in like way.

These are delightful morsels to serve in milk. In many conditions they will serve your purpose better than anything else we know. And the three of them afford variety.

The Quaker Oats Company
Chicago (1096)

Puffed Wheat, 12c
Puffed Rice, 15c
Corn Puffs, Corn Hearts Puffed, 15c
Except in Extreme West

Grand Prix Awarded Bausch & Lomb Microtomes

The International Jury of Award, Panama-Pacific Exposition, has conferred the Grand Prize upon Bausch & Lomb Microtomes. This decision is natural, as Bausch & Lomb have taken the initiative in this field for the past thirty odd years, being the leading manufacturers of a complete line in America.

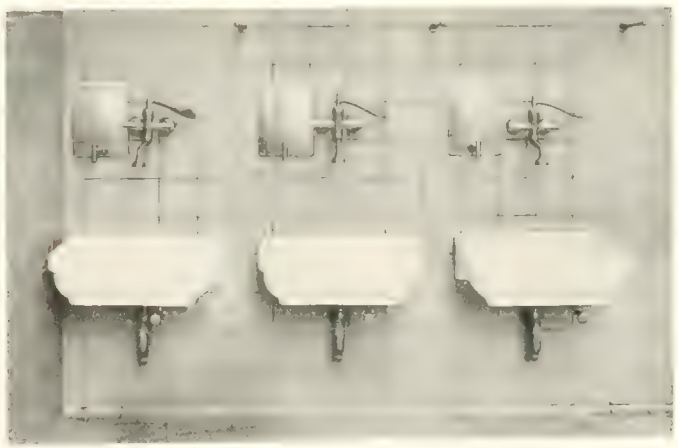
As announced, the Grand Prize was also conferred upon Bausch & Lomb Microscopes in recognition of their superiority in design and construction—optical and mechanical. A medal of honor was granted B. & L. Photomicrographic Apparatus.

Bausch & Lomb products at the Exposition received four Grand Prix, one Medal of Honor and one Gold Medal, the award in each case being the highest prize granted.

Bausch & Lomb Optical Co.

416 ST. PAUL ST., ROCHESTER, N. Y.

Leading American Makers of Microscopes, Microtomes, Photomicrographic Apparatus, Projection Apparatus (Balopticons), Photographic Lenses and other high-grade Optical Products



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CLOW HOSPITAL PLUMBING *in the Henry Ford Hospital Detroit, Mich.*

BATTERY OF CLOW ADAMANTOSE SINKS WITH ELBOW-OPERATED COMBINATION SUPPLY AS INSTALLED IN THE HENRY FORD HOSPITAL.

LET US CONSULT WITH YOU WHEN CONSIDERING HOSPITAL PLUMBING.

JAMES B. CLOW & SONS *Established 1878* HARRISON STREET BRIDGE, CHICAGO

Sales Offices: NEW YORK MILWAUKEE ST. LOUIS KANSAS CITY MINNEAPOLIS LOS ANGELES SAN FRANCISCO

Hospital Needs of the Navy

The necessity for increased appropriations for his department, in order that it keep pace with the other developments in the naval force of the country, was urged by Rear Admiral Braisted, surgeon general of the navy, in a recent address before the Medical Club of Philadelphia.

Among the needs of his department Admiral Braisted enumerated a reserve corps of 700 surgeons, in addition to 400 active surgeons, 500 male trained nurses, an increase of from 140 to 800 women nurses and more hospital ships. A two-year reserve supply of medicines and other supplies should also be provided for, he declared, in order that the hospital corps of the navy be in a position to adequately care for the wounded, in case the navy should become engaged in war service on an extensive scale.

The time has gone by for controversies and antagonisms between hospitals and medical schools. Hospitals should regard it as a great privilege to be affiliated with a good school, because their patients will get better care in a teaching atmosphere, their interns and nurses will get better training, and hence they will be able to attract higher grade young people for both these services.

School trustees and faculty members, on the other hand, should be especially pleased if they can have the clinical material of a good hospital under their direction; but they should realize that the physical management of the hospital is one thing and its medical service another. Doctors ought not want to interfere with the physical management —for two reasons: first, they know nothing about it, and they would never be able to see any but their own side of administration; second, there is nothing in it for them, or their patients, or their school.

Faculty members on hospital staffs should have the loyal cooperation of the hospital superintendent and the hospital board, and their needs in the way of service for patients should be promptly and efficiently met. If that is done it is all they should want, and it is certainly all they should have.

Hospitals always have a great deal of trouble with their flavoring extracts, especially vanilla, since that is a favorite flavoring for the sick. But good vanilla extract is very high and the poor quality has to be used like water to make any impression on the taste of a cake, custard or dessert.

Miss Lulu Graves, dietitian at Lakeside, Cleveland, has been making her own vanilla extract for several months and cut her monthly bill down to one-fourth the amount it had been running. Her recipe is as follows:

Buy 8-inch vanilla beans, selecting those that have a shiny, gummy appearance. Before the war began to affect the price, she paid $4.50 per pound, but now has to pay $7.50. Even at that price the saving is great. She takes one pound of the beans, grinds and mashes them well, adds six quarts of grain alcohol and lets the mass stand, well corked, for from two to three months—the longer the better. She then pours the alcohol off and adds to the residue or grounds one pound of granulated sugar, stirs well into the mass and puts it into a filter. She then pours the alcohol over this mass to go through the filter. The extract is then ready for use, beautifully clear and so strong that a very little of it will go a long way.

The government recipe prescribes four quarts of alcohol to the pound of crushed beans, but lets it stand only two or three weeks. Miss Graves claims she gets enough more out of the beans by the additional length of time of maceration to justify the additional two quarts of alcohol.

Are Your Nurses Sailors?

IF the guides, car and counterweight of your present Hand Power Dumbwaiter are in good condition you can install an Electric Hoisting Machine very cheaply.

Then you just "Press-a-Button," and get efficient, speedy service that is satisfactory.

Write for details

BURDETT-MFG. ROWNTREE CO.

515 Laflin Street, CHICAGO
119 West 40th Street, NEW YORK
525 Market Street, SAN FRANCISCO
931 Security Building, LOS ANGELES

Fire Protection Sanitation—Profit

THAT'S what a Schick All-steel Fireproof Waste Paper Baler means to you. It eliminates fire risk from waste paper, cloth, rubbish, etc. You keep the waste in the fireproof Schick until enough accumulates to make a bale—then sell at a profit. No untidy, insanitary rubbish piles for careless persons to throw matches into. You can't prevent carelessness, but you can eliminate the rubbish heap.

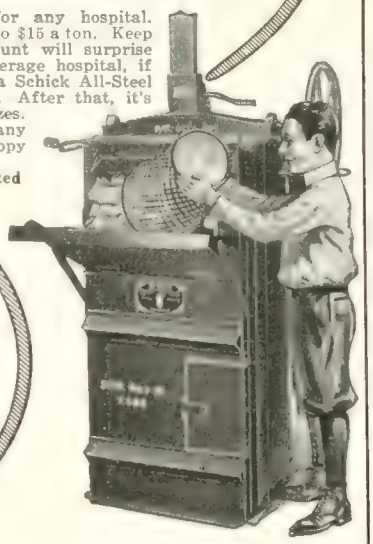
Keeps Premises Sanitary

ALL STEEL Schick FIREPROOF

Eliminates Fire Risk

A profitable investment for any hospital. Baled waste paper brings $7 to $15 a ton. Keep track of the waste—the amount will surprise you. The waste from an average hospital, if baled and sold, will pay for a Schick All-Steel Baler in a very few months. After that, it's all profit. Made in five sizes. Strong guarantee. Used in many U. S. post offices. Get a copy of catalog M-14.

Salesmen and Jobbers Wanted



10 DAYS' FREE TRIAL

Let us send you a Schick Baler for ten days' free trial. No obligation whatever. Give it a thorough try-out, and if you are willing to let it go after that, we will take it off your hands.

Davenport Mfg. Co.
Davenport, Iowa.

HOSPITAL Rubber Sheeting must serve a twofold purpose; first, it must not decompose in use; second, it must protect from damage everything placed underneath it.

PLYMOUTH SANITARY RUBBER SHEETING

measures up to these two fundamental features, coupled with the highest degree of efficiency.

It Does Not Decompose — Because Plymouth Sanitary Rubber Sheeting is made from a pure Para compound that ***cannot*** decompose.

It Protects From Damage — Because Plymouth Sanitary Rubber Sheeting is impervious to blood, urine, acids, alkalies, alcohol and ether.

We offer Plymouth Quality as the inducement. Insist upon Plymouth Quality and you will get the best Hospital Sheeting.

Plymouth Sanitary Rubber Sheeting for hospitals and the sick room bears the stamp of the largest rubberizers of cloth in the world.

PLYMOUTH RUBBER COMPANY
CANTON, MASS.

TRADE SUPPLIED BY ALL LEADING JOBBERS

"PROVEN BEST BY THE CAN-OPENER TEST"

A Message for Hospital Superintendents and Dietitians

The cuisine of your hospital must be above reproach. Patients and staff advertise your meals favorably or unfavorably as you may deserve. We know what is necessary. Our specialized knowledge of hospital quality ideals is yours for the asking. Why rely on sources of supply not so good? The can-opener will prove our case. Let us send samples —without obligation.

The Coast Products Company
406-408 Market Street
SAINT LOUIS

A COMPLETE LINE OF FRUITS AND VEGETABLES

CLASSIFIED ADVERTISING.

Under proper headings this column will present advertisements of Positions Wanted, Help Wanted, Articles for Sale, etc.

When requested, replies will be received at the business office of THE MODERN HOSPITAL, Metropolitan Building, St. Louis, and will be forwarded promptly to the advertiser.

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POSITIONS WANTED.

POSITIONS—Superintendents of hospitals, superintendents of nurses, etc., furnished hospitals anywhere in the world. No charge to Hospital Boards for this service. If you want nurses capable of developing your institution, why not let us put you in touch with the very superintendent for whom you are looking? We have the most competent hospital superintendents registered with us for advanced positions. If you need an organizer or teacher promptly, write us now. Aznoe's Central Registry for Nurses, 3544 South Grand Boulevard, Chicago, Ill.

POSITION—As superintendent of a general hospital. Am at present assistant superintendent of one of the largest hospitals in this country. Am 45 years of age and have had seven years' experience. Address J. J. D., THE MODERN HOSPITAL, Metropolitan Building, St. Louis.

POSITION—As superintendent. A registered graduate nurse with good experience and special college preparations for hospital administration, wishes superintendency of larger hospital than present position. Highest credentials. Address "College," THE MODERN HOSPITAL, Metropolitan Building, St. Louis.

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POSITION—By registered nurse in hospital, sanatorium or college. Address M. W., THE MODERN HOSPITAL, Metropolitan Building, St. Louis.

POSITION—As superintendent, assistant supervisor or head nurse, by Massachusetts registered graduate nurse; post-graduate Mt. Sinai Hospital, New York. Superintendent of Infants Hospital past four years. References good. East preferred. Address M. H. R., THE MODERN HOSPITAL, Metropolitan Building, St. Louis.

POSITIONS—By two graduate registered nurses in hospital or sanatorium as supervising nurses, assistant superintendent, or surgical nurse. Highest credentials. Address X. Y., 1401 Jefferson street, Butte, Montana.

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WANTED—An incorporated Hospital Association, established 25 years in a New England community (30,000 population), desires to obtain the services of a high-class superintendent, to transact all the business between this hospital and the community to support adequately said hospital. Liberal compensation to capable, efficient party. State age, experience and salary desired. Address J. M., THE MODERN HOSPITAL, Tower Building, 6 North Michigan Blvd., Chicago, Illinois.

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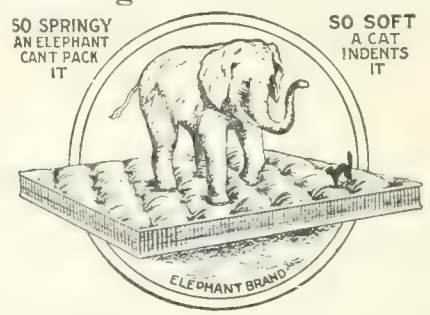
Continued on page 48

The Height of Bed Comfort



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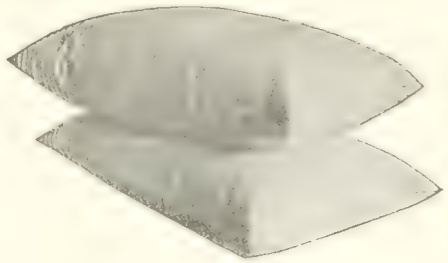
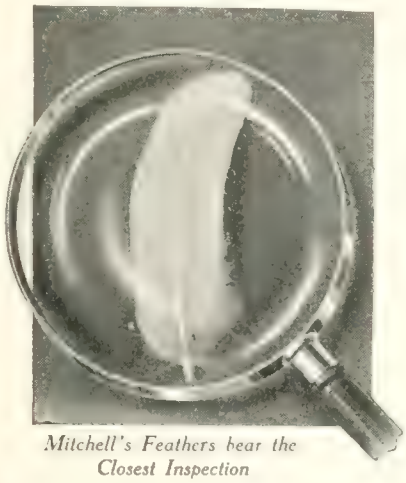


HOSPITAL Pillows must be *comfortable.* They must be soft and yet plump. They must support the patient's head and allow him to breathe freely. They must not become mere mats to lay the head on. To hospital patients comfort is a necessity, not a luxury.



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with the elimination of the repulsive cloth towel, which, by contact with many hands and faces, is germ-catching and disease-spreading. Even "individual" cloth towels cannot be sanitary. Laundry washing does not kill the myriads of deadly germs, and the towels pass through dozens of hands, mostly unclean if no worse, and probably infected. Every cloth towel, in fact, is constantly exposed to deadly infections. Any paper towel is therefore less sickening and dangerous because cleaner and more wholesome. But the *ideal* towel should never be exposed before use, should be untouched by *any* hand; it should avoid waste in using and offer the healthy satisfaction of *rubbing* the skin, besides drying it.

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are made in *pre-shrunk* removable ticking, which can be laundered or sterilized. When it is put on the mattress after laundering it will *still fit.*

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CLASSIFIED ADVERTISING.

Continued from page 46

HELP WANTED—Continued

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Continued on page 50

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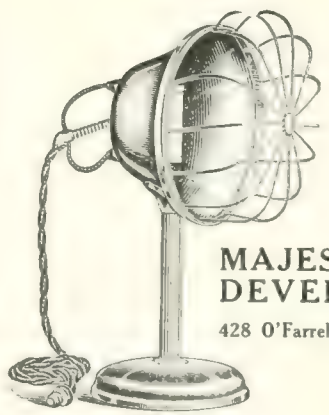

is warmed air, unchanged chemically.

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Ampoules of Sterilized Solutions.

(FOR HYPODERMATIC ADMINISTRATION.)

ADVANTAGES: Asepsis, Convenience, Accuracy of Dose.

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Supplied in 1 Cc. ampoules, except as noted. *Ampoules of 2 Cc. †Ampoules of 1/2 Cc. ‡Ampoules of 5 Cc. ¶Ampoules of 10 Cc.
[We also supply Silver Nitrate, 1% (No. 19), and 2% (No. 84), not for hypodermatic administration.]

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A 72-page brochure, "Glaseptic Ampoules," containing a full list of our Sterilized Solutions, with formulas, therapeutic suggestions, etc., will be sent to any physician on receipt of request. Ask for a copy.

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CLASSIFIED ADVERTISING.

Continued from page 48

MISCELLANEOUS—Continued

BACK NUMBERS THE MODERN HOSPITAL WANTED—We will gladly purchase copies of the following named back numbers of THE MODERN HOSPITAL, paying thirty-five cents per copy if in good condition: November, 1914; March, 1915. Address THE MODERN HOSPITAL, Metropolitan Building, St. Louis.

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THE MILLER SURGEONS' RUBBER GLOVES are durable and will stand sterilization repeatedly. "Miller" quality means satisfaction. Write for complete description of our surgical supplies. Miller Rubber Company, Akron, Ohio.

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COOL, SPARKLING AND BEAUTIFUL DISHES made up in a minute—dishes that will prove 100% agreeable to the sick or convalescent patient. Jell-O is prepared in seven pure fruit flavors and makes a most delicious dessert. The Genesee Pure Food Company, LeRoy, N. Y.

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CHARTS FOR VISUAL INSTRUCTION—The modern hospital should have its nurse training school equipped with the Frohse life-size anatomical charts. Send for the free "Frohse Book," in which each chart is illustrated. A. J. Nystrom & Company, 623-633 W. Wabash avenue, Chicago.

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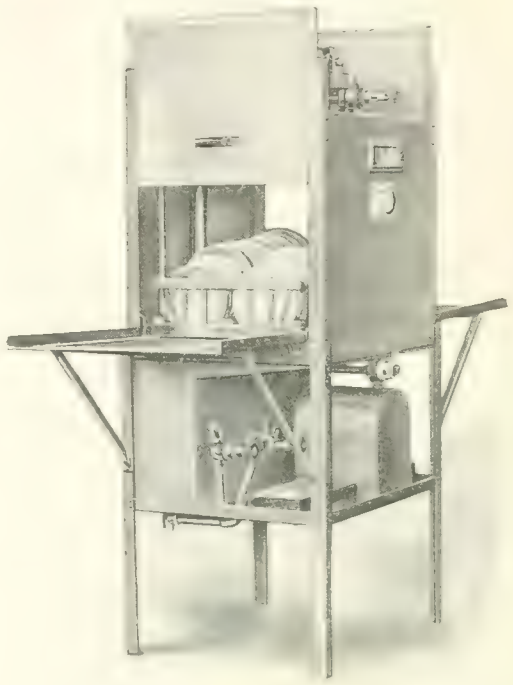
Continued on page 52

CRESCENT DISH WASHER

Noiseless—Rapid—Thorough
Easy to Operate



HOSPITAL MODEL A

Dishes are washed in torrents of soapsuds—rinsed and sterilized in clean, boiling water and automatically dried. All without being touched by hand.

Quickly pays for itself by reason of the saving of dishes, the elimination of dish towels, and the saving of time and labor.

The Crescent has been on the market for over twenty years. It is made in several sizes, and is used in leading hospitals and other institutions.

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CHICAGO — 215 West Superior Street
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Delicacies of Dietetic Value

SPANISH CREAM

½ envelope Knox Sparkling Gelatine	½ cup sugar (scant)
3 cups milk	¼ teaspoonful salt
Whites of three eggs	1 teaspoonful vanilla, or
Yolks of three eggs	3 tablespoonfuls wine, if desired

Soak gelatine in one-half cup milk. Scald remaining milk and pour slowly on the yolks of eggs well beaten. Add sugar and salt and return to double boiler. Cook until mixture thickens somewhat. Remove from stove, and add gelatine and whites of eggs beaten until stiff. Flavor, and turn into individual molds, first dipped in cold water, and chill. Serve with whipped cream. More gelatine will be required if large molds are used.

THERE is a well recognized place in the dietary of the sick and convalescent for delicacies which combine food value with attractiveness and appetizing qualities.

KNOX SPARKLING GELATINE

(It is Granulated)

fills this place in a marked degree. It fills a distinct need as an easily assimilated vehicle for other food substances, which, with Knox Gelatine, can be prepared in dainty and appetizing forms as desserts, jellies, puddings, salads, etc.

It is also an albumin and protein "sparer" that Knox Gelatine has especial value. (See Munk, Voit, Panum, Bauer, and others.)

Knox Gelatine, being plain gelatine without flavor, sweetening or other added ingredients, can be used with exact knowledge as to the contents of any dish prepared with it. Such authorities as Dr. Wiley, Dr. Goudiss, Prof. Allyn, and Alfred W. McCann attest to its purity.

Its economy recommends it, too. A package makes two full quarts (½-gal.) of jelly. We will gladly send, free, a full-size package together with our new illustrated Recipe Book. This coupon is for your convenience. Mail it today.

Yellow Package

The contents of these packages are identical except the "Acidulated (or blue) package contains an extra envelope of lemon flavoring, saving the cost of lemons.

Blue Package

FREE—Recipe Book and Sample

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Please send me, FREE, a full-size package of Knox Gelatine and a Recipe Book of Desserts, Jellies, Puddings, Salads, etc.

Name .....

Address .....

CLASSIFIED ADVERTISING.

Continued from page 50

MISCELLANEOUS—Continued.

PRACTICAL RUGS FOR HOSPITALS—In actual wear the Kilmarnock, Thread and Thrum rugs are the best for hospital use. They are sanitary, durable, and artistic. Rugs suitable for all parts of your institution. See our announcement on page 82 of this journal. We will have our representative in your city call on you with samples at your request. Nye & Wait Kilmarnock Corporation, Auburn, N. Y.

SANI-STEEL FURNITURE—Our Columbia Line of Sani-Steel Furniture for Hospitals and Physicians is thoroughly illustrated in our Catalogue "H," which we will be glad to furnish any reader of this journal upon request. We manufacture our goods and offer to send them on trial. Let us hear from you. Columbia School Supply Company, Indianapolis, Ind.

THE FAULTLESS HOSPITAL CASTER—The new Faultless caster insures noiseless movement, easy turning and durability. The caster is pivot bearing and interchangeable. Our announcement on page 116 of this number shows a sectional as well as an exterior view of this new member of the "Faultless Family." Samples gladly sent on request. The Faultless Caster Company, Evansville, Ind.

PAPER BALER ON TEN DAYS' TRIAL—If your institution is not provided with a paper baler you are losing money; your hospital has an added fire danger, and one of your sanitation problems is neglected. The Schick all-steel, fireproof waste paper baler will prove a profit rather than an expense. Let us send you one on ten days' trial, after which time we will take it back if you are willing to do without it. See illustration and fuller particulars on page 45 of this number. The Davenport Manufacturing Company, Davenport, Iowa.

BAYONNE ROOF AND DECK CLOTH is waterproof and dampproof, and has a place for various uses in your hospital. The Pontiac State Hospital has used over 4,000 square feet of Bayonne and finds it displaces oilcloth and other floor coverings with great advantage. Write for Sample Book "B" giving laying instructions and prices. John Boyle & Company, Inc., 112-114 Duane street, New York City.

THE "SEE SEE" INNER SPRING MATTRESS embraces all the benefits of bed comfort in hospitals. It gives relief and comfort and prevents patients from becoming bedsore. See the illustration of this mattress in our announcement on page 46 of this issue, and write to Department H, Cream City Bedding Company, Milwaukee, Wis., for further information.

A NEW IMPERMEABLE DRESSING—IMPERMEPHANE—It is strong, tough, flexible, soft and light and is perfectly transparent. Will not crack, break or stick. Can be boiled or steam sterilized. Will keep in any climate. Get trial box of ten square yards, price $2.50. Reid Bros., 1303 Fourth avenue, Seattle, Wash.

Continued on page 54

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You are no doubt aware of the recent extreme advance on cotton and all cotton goods, especially Bed Spreads.

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62x88 at .....$0.90 each
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These Crochet Spreads are of the best quality, made by one of the best spread mills in the world. They are not made of soft, flimsy yarn that will go to pieces in the laundry, but of the best hard twisted yarn made of long staple cotton that will improve in laundering.

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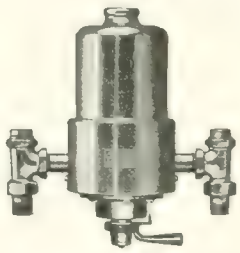
They come 100 to a case, but we will sell you more or less at the same prices. How many can you use?



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APPLIED to the continuous flowing bath the POWERS THERMOSTATIC HOT WATER CONTROLLER makes it possible to fill the doctor's prescription with accuracy. The controller is easily adjusted to the temperature desired, and maintains this temperature regardless of varying pressures or temperatures in water supplies. Failure of the cold water supply automatically shuts off the hot, thereby making scalding an impossibility.

The controller is adaptable to all installations; may be set in table, or locked in a wall recess, or exposed with adjusting handle, as desired. It can be installed by any plumber.

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Solid rolled steel welded construction.
Sanitary, no dust pockets, no cracks.
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Can open up to five or six inches at center, while still closed top and bottom.
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Ease of operation—can be operated with slight effort.
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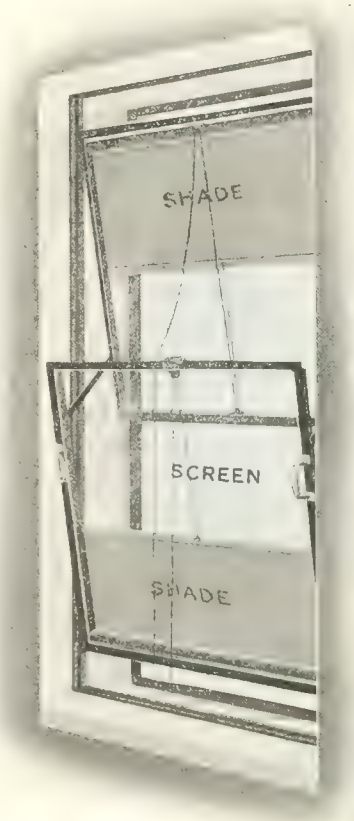
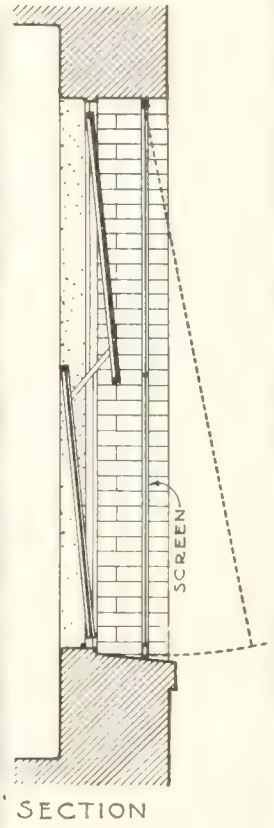
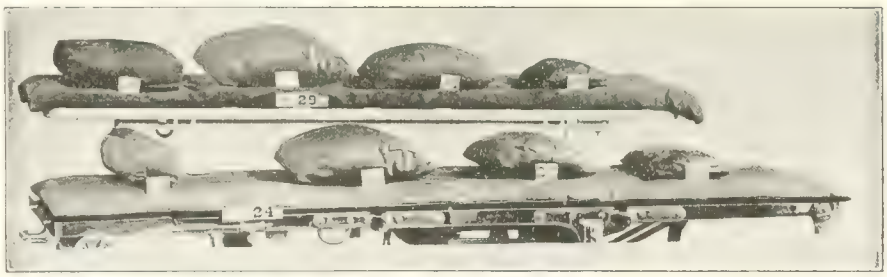


INTERIOR VIEW



SECTION

The Ideal Hospital Window



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Our Back Rest and Table Pads assure your patient comfort and ease.

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CLASSIFIED ADVERTISING.

Continued from page 52

MISCELLANEOUS—Continued

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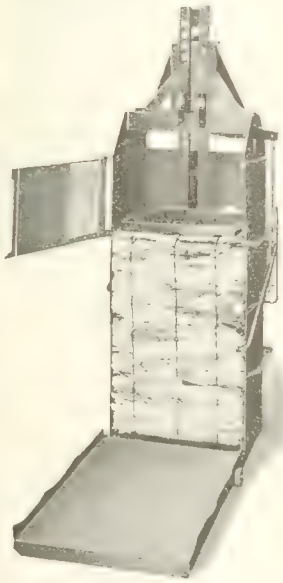

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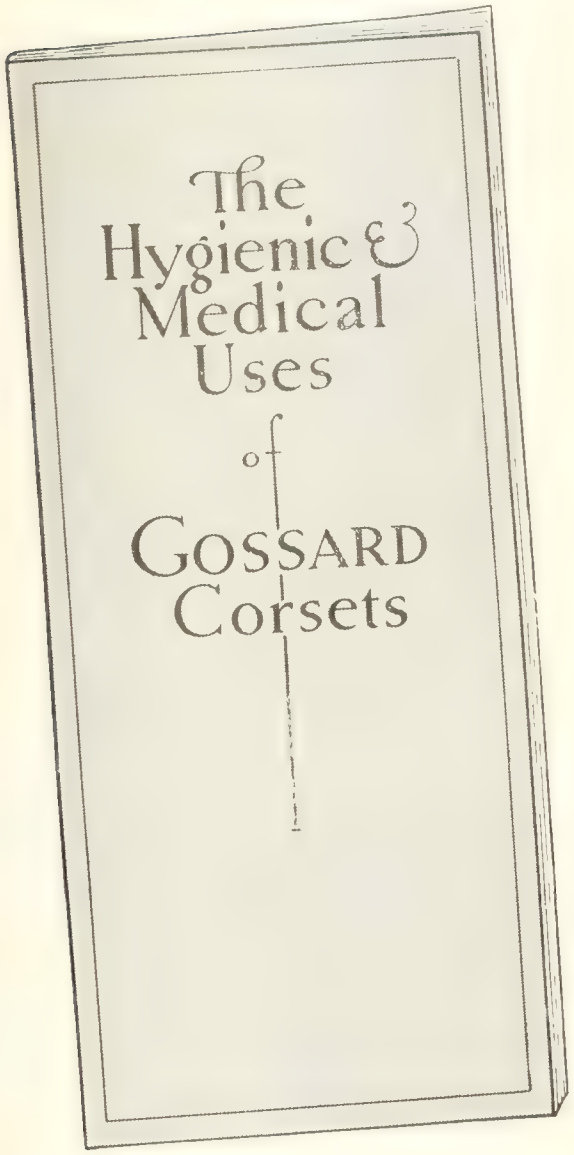

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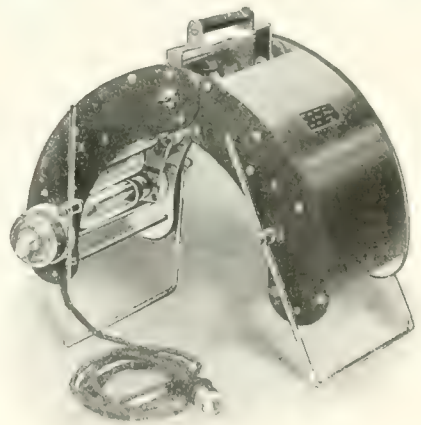

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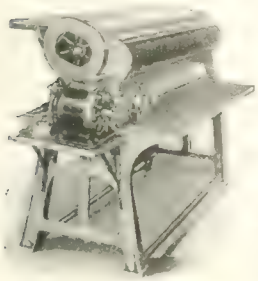

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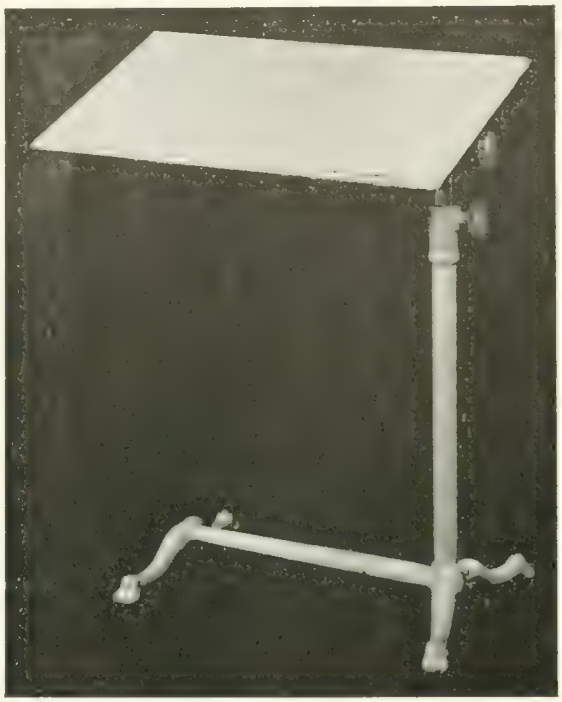

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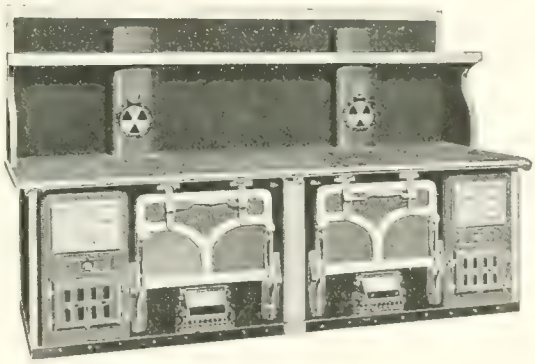

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BLOOMFIELD, N. J.

In Prescribing the Diet

In suggesting the use of any kind of food where a certain diet is necessary it is, of course, a source of satisfaction to the advising physician to know that the quality of the food recommended is uniformly good.

Sunkist

Oranges

For instance, in the selection of oranges by those who purchase the food supplies for hospitals or the home sick-room, it is now well to choose the Sunkist *brand,* because *Sunkist* oranges are *uniform* in eating quality and healthfulness. They are not shipped from California until they meet a minimum standard of 8 parts soluble solids to 1 part of acid. It is almost invariably the case that Sunkist oranges *surpass* the standard.

Sunkist Oranges are the product of the California Fruit Growers Exchange, a co-operative and *strictly non-profit* organization of 8000 growers, who have joined hands for the sole purposes of producing *better* fruit, so that more people will want it, and distributing it *economically,* so that it need not be sold to consumers at *premium prices.*

Sunkist Oranges cost no more than ordinary oranges. They are clean, healthful, pure. They are *picked ripe* and *shipped fresh* from California by fast freight to all markets every day the year 'round.

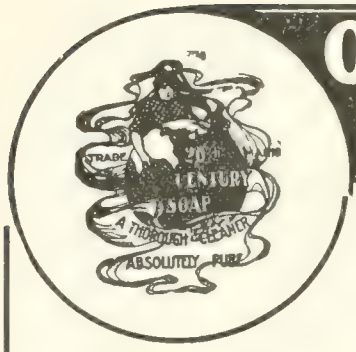
All first-class wholesalers and dealers are *always* well supplied with fresh Sunkist Oranges and Lemons.

(417)

CALIFORNIA FRUIT GROWERS EXCHANGE

CO-OPERATIVE—NON-PROFIT

Eastern Headquarters, Dept. A69, 139 N. Clark St., Chicago



Original 20th Century Soap for Hospitals

The most economical soap for Hospitals—and the one cleanser that will serve every purpose—for cleaning wood, marble, and tile floors; woodwork, furniture, and all finished surfaces; as well as for the laundry, kitchen, and bath—the one all-purpose Hospital Cleanser.

Absolutely Pure—No Lye

Original 20th Century Soap contains no free oil or free alkali. It is manufactured from absolutely pure vegetable oils, and contains no animal fats or grease, or adulterations of any kind.

Rapidly removes dirt from painted, varnished, and enameled surfaces. Gives a luster to woodwork, furniture, and hardwood floors equal to an oil or polish, cleaning at the same time, leaving them uncolored and unstreaked.

Equally serviceable in the laundry—does not shrink woolens, and keeps them soft.

Write for prices and see why Original 20th Century Soap is the most economical you can use.

Theo. B. Robertson Soap Company, Inc.

Manufacturers of Cleansing Materials for all Purposes

700-704 West Division Street **CHICAGO, ILL.**

Western Office: M. M. CLARK, Manager, 300 to 328 Avery Street, LOS ANGELES, CAL.

QUALITY

In a Rubber Glove

is what makes it flexible, yielding, light, with no sacrifice of the strength needed to stand sterilization.

Our gloves will stand a year's use without deterioration, undergoing repeated sterilizations. We own the process that gives them this quality.

Ask your jobber for them. If you can not get them there, send us his name and the name of your institution, and we will send you a pair free.

Massillon Rubber Co.
Massillon, Ohio

An Air Filter

STICKLEY'S GOOD HEALTH SCREEN allows plenty of fresh air to enter, without admitting soot or dust, and without allowing drafts and the consequent chilling of the room.

A blessing in the hospital. Strong cloth mesh (washable, changeable, large or small openings) in a mahogany finished portable frame.

L. & J. G. STICKLEY *Send for catalogue of our well-known furniture*
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NATURE'S GREAT PURIFIER

BORAX is an antiseptic and a detergent; it softens water and benefits the skin; it is a harmless and nonirritating disinfectant; every physician and nurse knows its uses in the sick-room. Believing, however, that the wide range of its use is not fully known by many people, we propose to tell in this space each month some of the uses of

The 20-Mule Team Family

Do you know that Borax will renovate your gas range? that it gives to lingerie and linens the proper amount of stiffness without starching? that it is invaluable for the toilet, for the laundry, and as a kitchen cleanser and a water softener? Write for our little booklet, "The Magic Crystal," a most useful handbook. The 20-Mule Team Family includes

20-Mule Team BORAX SOAP **20-Mule Team BORAXO** **20-Mule Team BORAX**
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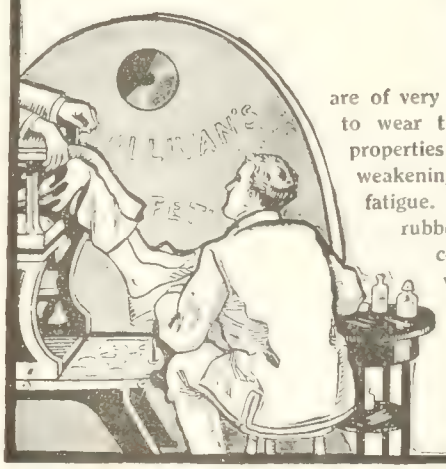
PACIFIC COAST BORAX COMPANY

CHICAGO NEW YORK OAKLAND, CAL.

"In Caring for the Feet",

recently said a well know physician who devotes special attention to foot troubles, "I have found that

O'Sullivan's HEELS



are of very pronounced value. I urge my patients with foot ailments to wear them regularly, for their resiliency and shock-absorbing properties assure the relief of muscular tension with its tendencies to weakening of the foot muscles and the development of excessive fatigue. I have proven, moreover, to my entire satisfaction that rubber heels in helping to restore and maintain foot health, contribute in no uncertain way to the general comfort and well being."

Are your patients enjoying the advantages of O'Sullivan's Heels?

O'SULLIVAN RUBBER COMPANY
131 Hudson St., New York City

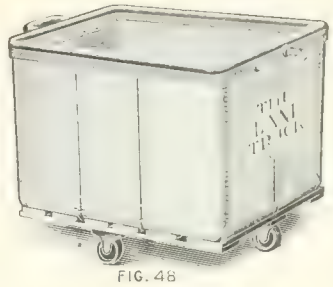


FIG. 48

Regular mounting, Iron Wheels, of ample diameter and tread, with String Guards.

Furnished with Rubber Tires, when specified.

Write for complete Catalog

LANE CANVAS INSTITUTION TRUCK

Recommended for most severe use.

Strong but light steel frame, mounted with slight tilt, as shown, or on swivel casters under corners.

Body of heavy, close-woven cotton duck, can be readily cleaned by scrubbing.

Its silent running quality and great durability adapt it to institution or hospital use.

MANUFACTURED BY

W. T. LANE & BROTHER, Poughkeepsie, N. Y.

25c a yard

(Width 36 inches)

for a serviceable, sanitary, odorless floor covering that ***will outwear high-priced floor coverings.***

Keystone Brand Floor Covering

DEADENS SOUND, easy for the feet, easily cleaned. Waterproof, will not rot, dry out, curl or crack. Will not change color.

Is STIFF and FIRM. Lies close to the floor without fastening. Anyone can lay it.

Adapted for hard surfaced floors and wooden floors, for runners in halls and other parts of buildings and for covering entire floors.

Price—25c a yard, f. o. b. York, Pa.
12-yard rolls, $3.00; 24-yard rolls, $6.00.

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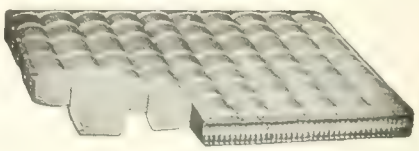
Box 546, YORK, PA.

Each compartment of the

DIXIE NoTUFT Compartment Mattress

is separately filled. The amount of filling for each is weighed. Those compartments which have the most wear contain the most filling. *It is scientifically built.*



WILL NOT SPREAD
NO DIRT POCKETS
NO TUFT TO PULL OUT

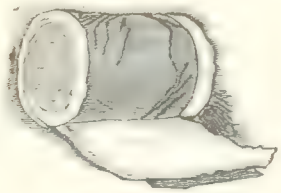
The Ideal Hospital Mattress

DIXIE

NEW YORK
Pearl and Prospect Streets
Borough of Brooklyn

CHICAGO
21st Street and
Centre Avenue

PITTSBURGH
37 Terminal Way



HOW much do you spend for absorbent cotton per year? It is probably a fair-sized item in your hospital. Write us your address on a postal and we will show you a saving.

The Maplewood Mills are the biggest in the country. We have built up a large hospital trade by reason of the fact that we meet the exacting requirements of surgeons and yet manufacture on so large a scale we can sell our cotton at a very low price.

MAPLEWOOD MILLS
FALL RIVER, MASS.

The Modern Covering for Modern Hospitals

BAYONNE ROOF AND DECK CLOTH

Because Absolutely Sanitary

BAYONNE is the most sanitary covering for roofs and decks of verandas, sun parlors and sleeping porches because it can be scrubbed and sluiced with water just as cement. And, unlike any cement or metal covering, it deadens the noise of footsteps and rain.

More economical in laying, BAYONNE outlasts any other material. It is tacked on the dry boards and will last as long as the building. It is water and temperature-proof; never leaks and does not hold dampness, nor does it shrink or expand, peel or crack with heat or cold.

Hospitals like the Pontiac State Hospital, of Pontiac, Mich., and the Raybrook State Hospital of Raybrook, L. I., have given BAYONNE the preference.

Write for Sample Book "B," giving prices and instructions for laying

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112-114 Duane Street 70-72 Reade Street
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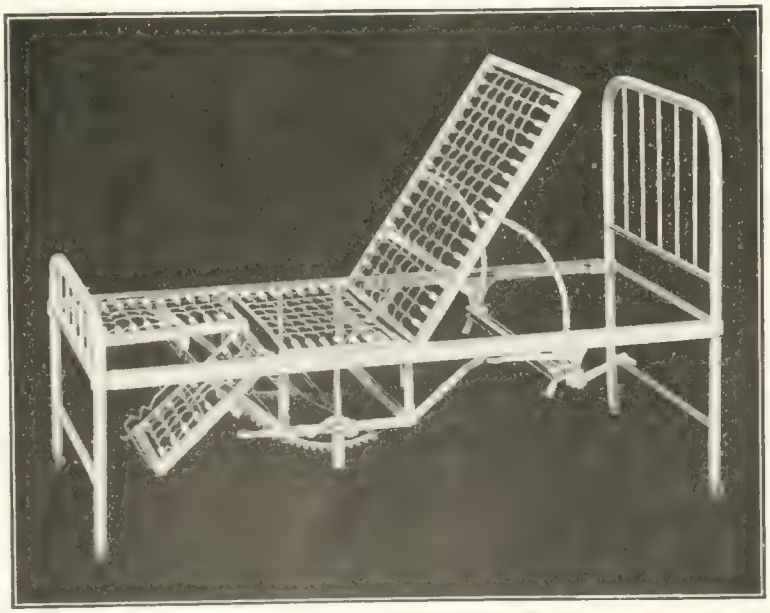
Branch House—202-204 Market Street, St. Louis
Also headquarters for Bleached Gauze, Bandage Muslin, Crash Toweling, etc.

THE WALLACE ADJUSTABLE BED



Conforms to Every Required Position of the Patient in Sickness, Injury and Convalescence

THE BED THAT SATISFIES PATIENT, PHYSICIAN AND NURSE

THE WALLACE ADJUSTABLE BED is a recommendation to the hospital using it, for pleased patients tell others, and the character of the equipment impresses the visitor favorably and inevitably.

THE WALLACE ADJUSTABLE BED can be adjusted quickly and with little effort to conform to every required position of the patient.

This means comfort for the patient—less work per patient for the nurse.

It means better co-operation with, and success of, the attending physician.

The mattress, in four sections, permits turning separately.

Separate sheets for each section facilitate change of linen.

"The bed-pan feature is alone worth the price of the bed," wrote an Ohio physician.

See Our Agents—Your Local Surgical Supply House—for Demonstration and Prices.

Wallace Adjustable Bed Sales Company
18 North Second Street, ST. LOUIS

DIRECTORY OF SANATORIUMS—INSTITUTIONS FOR NERVOUS AND MENTAL DISEASES

DR. MOODY'S SANITARIUM, San Antonio, Texas.

For Nervous and Mental Diseases, Drug and Alcohol Addictions, and Nervous Invalids Needing Rest and Recuperation.

Established 1903. Strictly ethical. Location delightful summer and winter. Approved diagnostic and therapeutic methods. Modern clinical laboratory. 7 buildings, each with separate lawns, each featuring a small separate sanitarium, affording wholesome restfulness and recreation, indoors and outdoors, tactful nursing and homelike comforts. Bath rooms en suite, 100 rooms, large galleries, modern equipments, 15 acres, 350 shade trees, cement walks, playgrounds. Surrounded by beautiful parks, Government Post grounds and Country Club.

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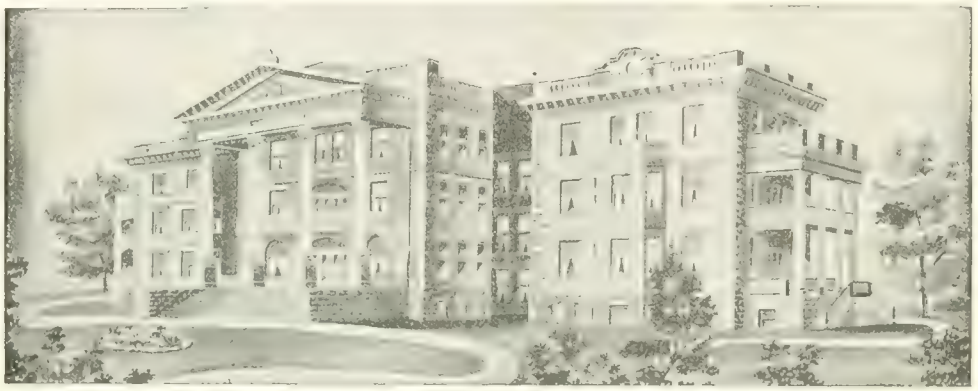

Waukesha Springs Sanitarium

FOR NERVOUS DISEASES

BYRON M. CAPLES, M. D.
Superintendent

Building Absolutely Fireproof

WAUKESHA, WIS.

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SACRED HEART SANITARIUM—For medical and neurological cases.

ST. MARY'S HILL—On separate side five blocks west. For drug and mild mental cases. Seven departments permit proper classification.

Both institutions conducted by Sisters of St. Francis of St. Joseph's Convent.

For booklet address Sister Superior or

DR. S. S. STACK, MED. SUPT., MILWAUKEE, WIS.

WALDHEIM PARK

A quiet, restful and homelike sanatorium having the most approved and modern equipment for the treatment of chronic and nervous diseases. It is ideally located in a beautiful 35-acre park on the north shore of Oconomowoc lake, with its own training school for nurses.

For further information address

DR. J. H. VOJE
Physician in Charge
Oconomowoc, Wis.

Oakwood Springs Sanitarium

The Lake Geneva Sanitariums

Lake Geneva
Wisconsin

Lakeside Sanitarium

Comprising two separate Hospital-Sanitariums, having separate buildings and separate grounds under one management, for the care of Nervous, Mental, and Habit Cases

OAKWOOD SPRINGS SANITARIUM—For mental and nervous cases requiring guardianship. All rooms are private, and each patient may have a room or suite, as may be required. There are no wards. Utmost freedom of house and grounds is afforded. Many of the most pleasant rooms can be entirely isolated from all others. A number of the bed rooms have private baths. The plumbing, heating, and electric lighting are new and modern. Superior system of ventilation. The building is fireproof. There are private parlors and dining rooms, trained nurses, teachers and masseurs. Located in beautiful park of seventy-three acres, overlooking the lake and city. No crowding is at any time permitted.

LAKESIDE SANITARIUM—For medical and general sanitarium cases requiring specialized treatment for nervous and mild mental diseases, with two buildings and grounds of ten acres, charmingly situated on the shores of the lake. Every useful form of bath and hydropathic procedure is provided, together with gymnastic exercises, Swedish movement and massage. Mental exercise and drills, together with requirements of physical and mental performance, are promoted, with a view to restoring, strengthening, or developing the faculties, particularly those of perception and will.

An invitation is extended to superintendents and hospital physicians to refer to us such of their nervous and mental disease patients as cannot be satisfactorily cared for in general hospitals. Our institutions are completely equipped and efficiently administered for these classes of patients; furthermore, the extent, topography, and beauty of the grounds and the advantages of Lake Geneva climate have a most salutary influence.

TO SAVE TIME, Hospital Superintendents and Physicians who refer patients to us are requested to call Superintendent or Assistant by long-distance telephone (Lake Geneva, 159) and direct operator to reverse the charges when wishing to inquire concerning the admission of patients. When notified of the time of expected arrival in Lake Geneva, carriage will be sent to the station to meet patients arriving.

For further information address

DR. OSCAR A. KING, Superintendent, LAKE GENEVA, WIS.

Or at Private Office, 7 West Madison Street, Corner State Street
CHICAGO, ILL.

Phone, Central 2508

OCONOMOWOC HEALTH RESORT

OCONOMOWOC, WISCONSIN

Built and equipped for treating **Nervous and Mild Mental Diseases**

Main line Chicago, Milwaukee & St. Paul Ry., 3 hours from Chicago—5 minutes from interurban line between Oconomowoc and Milwaukee. Trains met at Oconomowoc on request.

NEW, ABSOLUTELY FIREPROOF BUILDING

Forty-three acres of natural park surrounded by lakes and tree-covered hills. Situated in the garden spot of Wisconsin, the playground of the Central West. A beautiful country in which to convalesce. Number of patients limited, assuring the personal supervision of the resident physician in charge.

ARTHUR W. ROGERS, B. S., M. D.

A Bedside Table

that is graceful, attractive, strong and sanitary. It represents the minimum in bulk and weight; it is light and yet rigid.

It has two glass tops. The enamel, like that on our beds and other furniture, consists of three coats over a polished surface, baked on at high temperature. We realize the importance of enamel; ours will not crack.

Yet withal the price is very reasonable.

Life Long
GUARANTEED WHILE YOU LIVE

Made by* HARD MFG. CO., *Buffalo, N. Y.
Send for illustrated catalog

Style No. 7

A Garment for every need — Our Standard Fatigue Uniform.

The uniform here illustrated has been designed under the personal supervision of a Committee of R. N. for an all-round uniform. Our regular cuff fits the sleeve of this uniform.

This uniform does away with the wearing of a high collar, which interferes materially with the efficiency, as well as the comfort, of the wearer. It has a pique detachable as well as reversible collar.

It is made from Toil du Nord, blue gray Chambray, or Bates Seersucker, striped, at $1.85. Extra collars 15 cents additional. Same uniform made from a good quality linen-finish shrunk cotton, $2.00. Nurses' cap illustrated, made from heavy lawn, price $1.80 per dozen.

Our uniforms and aprons have been Standard for twenty-one years and are used by nearly all the leading hospitals throughout the United States and Canada.

WE SELL DIRECT

to the hospital or the individual nurse at wholesale prices. Every hospital superintendent or superintendent of nurses should write for our catalogue, showing styles and prices of our uniforms.

Eventually you will buy our uniform. Why not now? Write today.

Randles Mfg. Co.
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WATSON

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TRADE MARK

20th Century "Rewirable"

Insect Screens

Frame Screens in Wood, Steel and Bronze; Roll Screens in Steel and Bronze; Wood Doors of Any Description.

"The Complete Line"

To meet an increasing demand for a better and more appropriate screen door, we have developed our

METAL SCREEN DOORS

—light or heavy construction. Made in Steel or Bronze. Full-size details on request.

WATSON MANUFACTURING COMPANY
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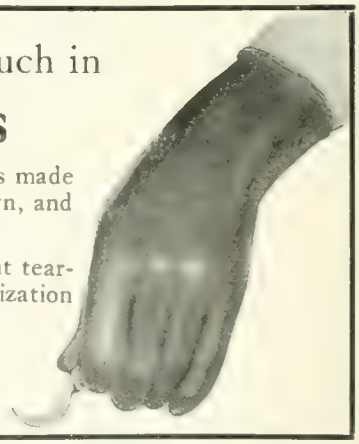
Uniform Thickness Preserves the True Surgical Touch in

Star Klinik Surgical Gloves

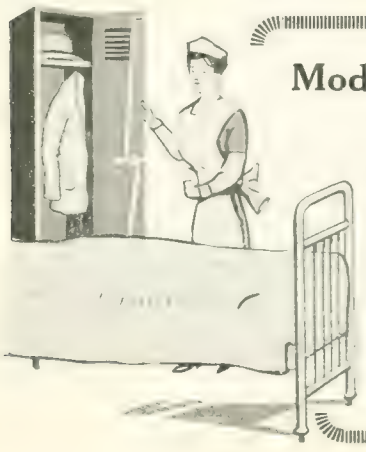


For your protection: absolute uniformity and freedom from thick or thin spots is made doubly sure by the "Star" policy of using only the highest grade of rubber known, and curing and inspecting all gloves to a most rigid standard of accuracy.

Star Gloves are reinforced at the wrist by a tapered thickness of rubber to prevent tearing; and treated by a method of our own that permits frequent sterilization without injury.

Get the best—Specify "Star Klinik"

The Star Rubber Company, Akron, Ohio



Modern Hospitals Now Store Their Patients' Clothing in

BERGER'S STEEL LOCKERS

THEY are a great convenience and lighten the work of the hospital staff, as they take care of each patient's clothing almost automatically. They save valuable space, and are an attractive addition to the institution. Sanitary and clean—the clothing being kept in perfect condition.

Our long experience in equipping hospitals with Berger's Steel Lockers is at your disposal.

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THE BERGER MFG. CO., Canton, Ohio

BRANCHES: Boston, New York, Philadelphia, Chicago, St. Louis, Minneapolis, San Francisco

Export Department: Berger Building, New York City, U. S. A.

"National" High Pressure Sterilizers

About 125 Hospitals already are using "National" Sterilizers. Here are a few of the more prominent:

Texas & Pacific Ry. Hospital, Marshall, Texas
Crosby Hospital, Crosby, N. D.
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Terry Hospital, Terry, Montana
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Maine State Sanitarium, Hebron, Maine
The Algona Hospital, Algona, Iowa
Provident Hospital, Pennville, Ind.
Freeport General Hospital, Freeport, Ill.
Hope Farm Sanitarium, Marshalltown, Del.
Telluride Hospital, Telluride, Colo.
San Antonio Hospital, Upland, Cal.
Valley Hospital, Valley, Wash.
Brookings Hospital, Brookings, Oregon

The "National" not only does the same work as the high-priced kind, but it does it quicker—no waiting to dry the dressings, as they are "bone dry" when the sterilizing in done.

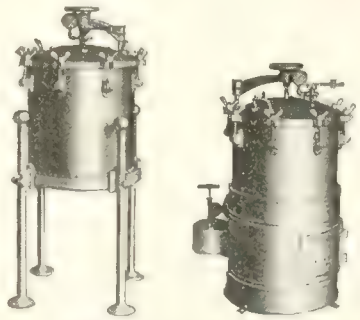
The "National" is compact, simple, easy to keep clean, and several can be bought for use in different parts of the hospital for the same amount that one of the high-priced kind would cost. Use the "National" for any sterilizing need—operating rooms, laboratories, or even to sterilize the silverware.

Prove that it is right by a ten-day trial—no money until you are satisfied. Fill out the coupon and mail today.

10-DAY FREE TRIAL

3 Sizes—Each in 2 Styles

DOCTOR'S SIZE
$15 Without Burner **$35** With Burner
Capacity: 1350 Cubic Inches



MEDIUM SIZE
$30 Without Burner **$50** With Burner
Capacity: 2475 Cubic Inches

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$65 Without Burner **$85** With Burner
Capacity: 7620 Cubic inches

All Dealers Carry the "National"

Northwestern Steel & Iron Works

632 Spring Street **Eau Claire, Wisconsin**

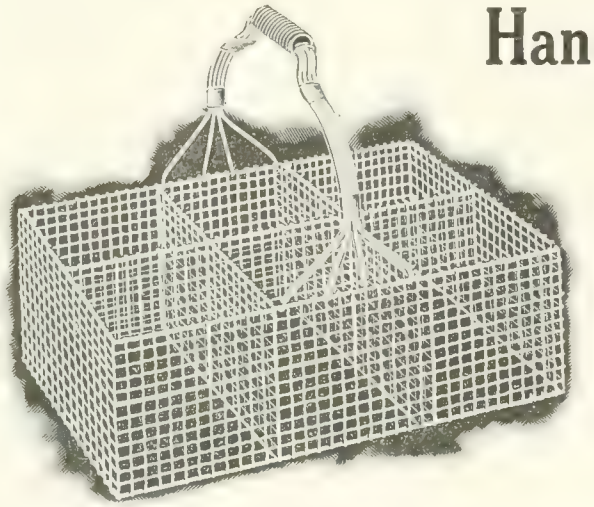
NORTHWESTERN STEEL & IRON WORKS
632 Spring St., Eau Claire, Wis.

Please send me at once full information about "National" High Pressure Sterilizers.

Please ship me at once for FREE TRIAL, one _____-size "National" Sterilizer {with / without} burner.

Name _____

Address _____



Handy Drug Room Basket

Practical—Light—Strong

Takes the place of the unsanitary wicker basket

FILLS A LONG-FELT WANT

CONSTRUCTION

Compartments, 5½ x 5½ inches square.

Wire of ½-inch mesh, so woven that the smallest bottle or pill box will not drop through.

Making it a combination holder of all size bottles used in drug departments.

Easy grip handle. Basket is dipped in tin after construction, giving it a permanent, non-rusting finish.

Made in Three Sizes:	Sizes	Compartments	Length	Width	Height	Write Today for Prices
	No. 1	4	11 inches	11 inches	6 inches	
	No. 2	6	17 inches	11 inches	6 inches	
	No. 3	8	22 inches	11 inches	6 inches	

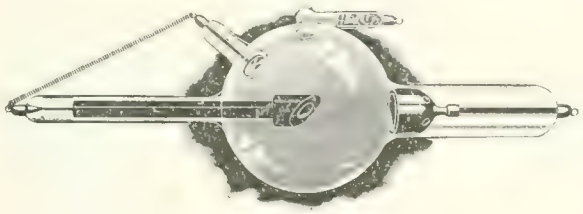
SHARP & SMITH, 155-157 N. Michigan Boulevard, Chicago

Established 1844 — Two Doors North of Randolph Street — Incorporated 1904

Makers, Importers and Exporters of

HIGH-GRADE SURGICAL INSTRUMENTS AND HOSPITAL SUPPLIES

Improved Transformer Tube with Steel Jacketed Cathode



PATENT APPLIED FOR

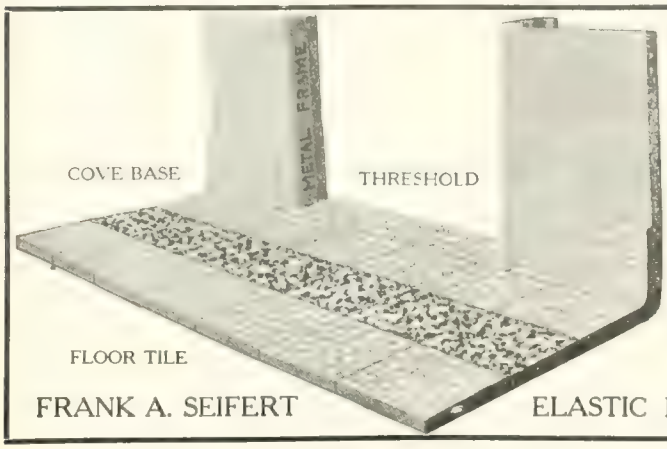
No. 100 Tungsten Target Transformer Tube; price, $35.00.

We are originators of Steel Jacketed Cathode Tubes

KESSELRING X-RAY TUBE COMPANY

INCORPORATED

Phone, Main 5288 — 136 W. Lake Street, CHICAGO, ILL.



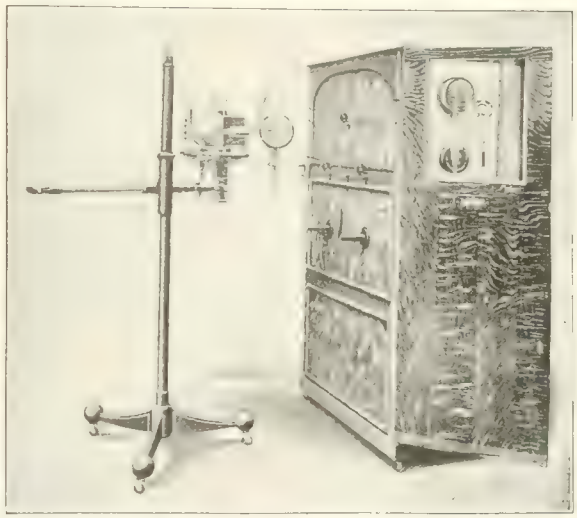
MARBLE MOSAIC FLOOR TILE, SANITARY COVE BASE, ONE-PIECE STAIR TREADS AND RISERS CAST IN SECTIONS AND MADE WITH HYDRAULIC PRESSURE, THEN SET SAME AS MARBLE WORK. THIS IS THE ONLY WAY YOU CAN AVOID CRACKS. BEING MADE WITH HYDRAULIC PRESSURE AND STEAM CURED, WE GET THE MAXIMUM STRENGTH FROM THE PORTLAND CEMENT WHICH IS OUR BINDER. OUR SANITARY COVE BASE AND FLOOR TILE WAS USED IN THE BARNES AND ST. LUKE'S HOSPITALS, TWO ISOLATION WARDS OF OUR CITY HOSPITAL AND MANY OTHERS LESS RECENTLY.

SEND FOR CATALOG

FRANK A. SEIFERT — ELASTIC RELIEF CO., 2626-30 DAYTON ST., ST. LOUIS

DEMAND AN IRONCLAD GUARANTEE

WHEN BUYING AN X-RAY TRANSFORMER



HOGAN SILENT X-RAY TRANSFORMER
Interrupterless, Motorless, Commutatorless and Noiseless

What Should the Guarantee Require?

1st—That the apparatus produce instantaneous Roentgenograms of stomach and intestines.

2nd—That tubes last for at least 200 exposures.

3rd—That it excite Fluoroscope for thirty minutes continuous running without heating tube.

4th—That it do treatment work without stopping to cool off tube.

5th—That the apparatus be perfectly silent in operation.

6th—*That absolutely no expense for repairs of any kind be required for five years.*

7th—That an unqualified guarantee against breakdown for five years be given with the apparatus.

"Impossibilities," you say. Not with the Hogan Silent X-Ray Transformer Illustrated. Our literature explains "WHY." Write today. Use the coupon.

Kindly explain your "Ironclad" Guarantee on the Hogan Silent Transformer, and send me literature and price on same.

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Address _____

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Gastro-Intestinal

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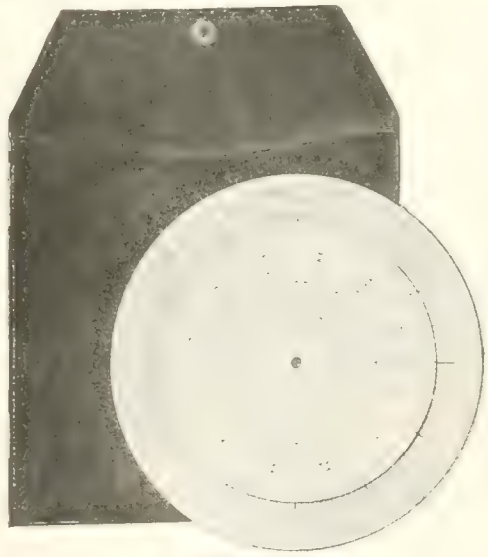

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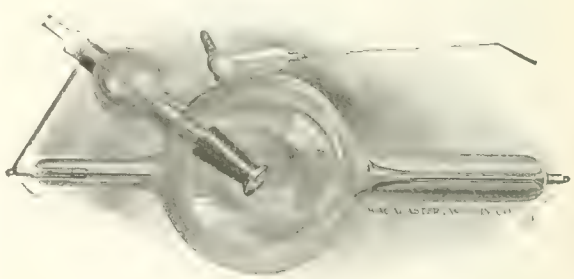

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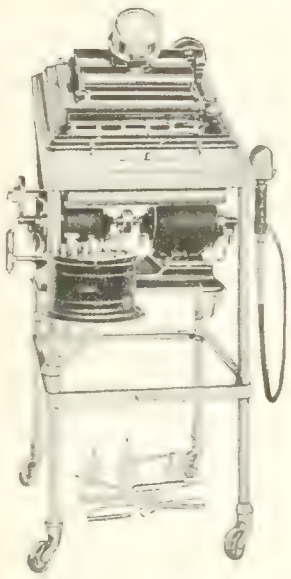

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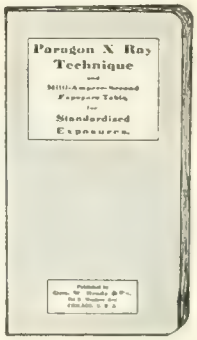

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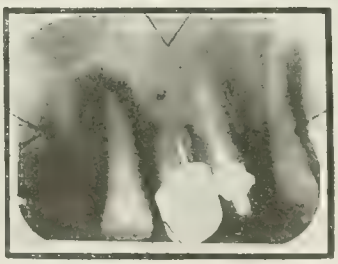

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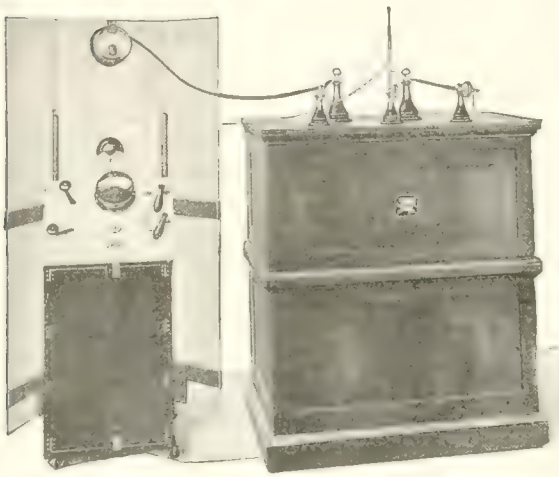

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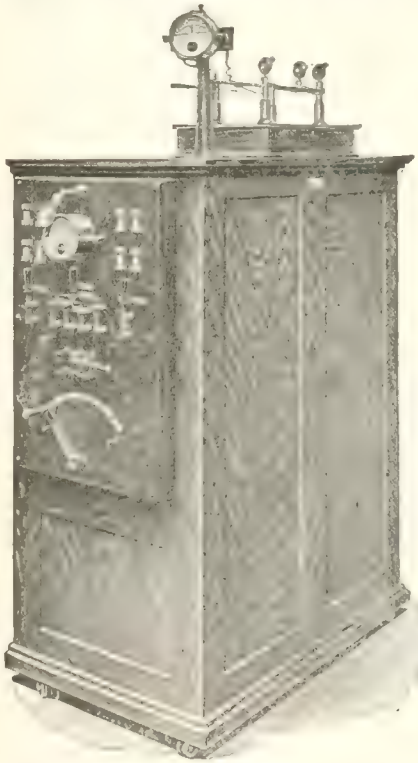

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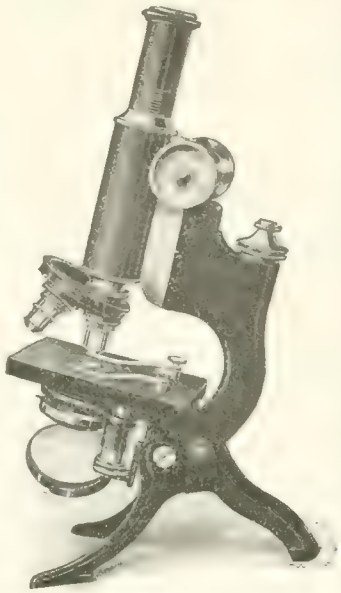

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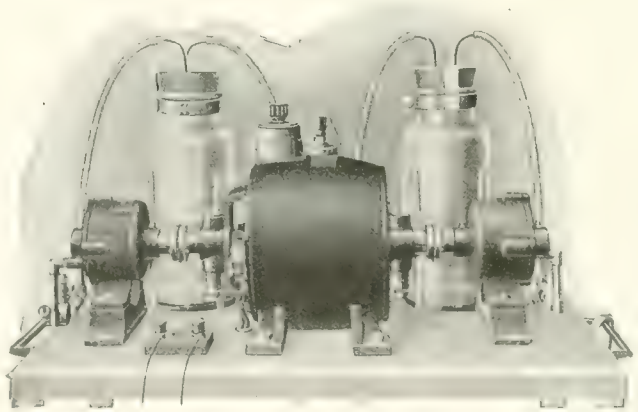

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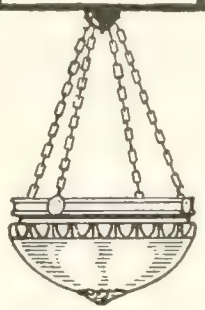

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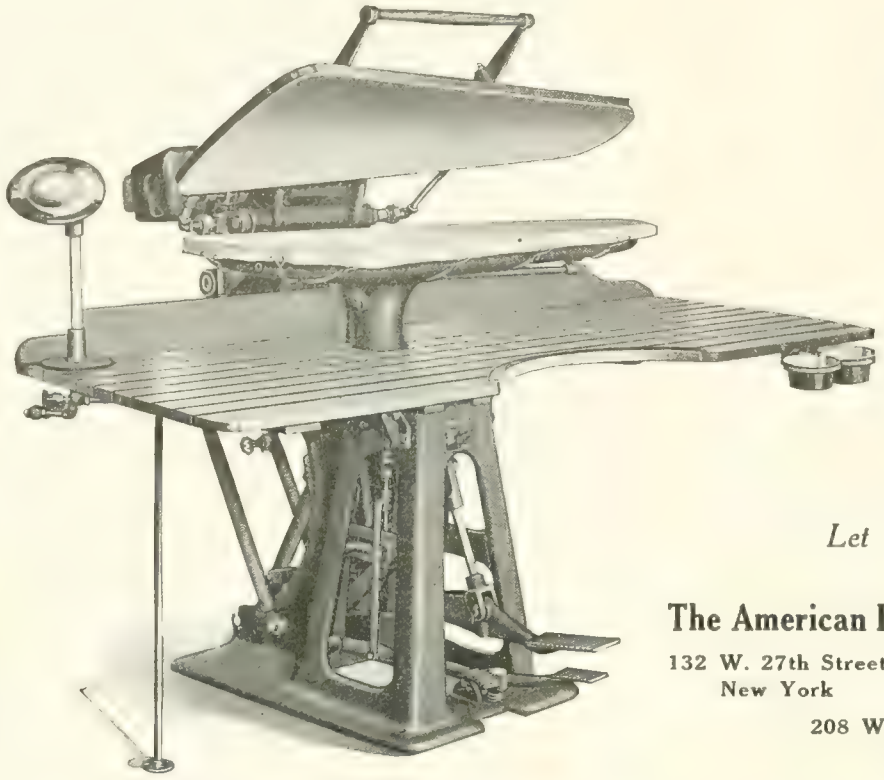

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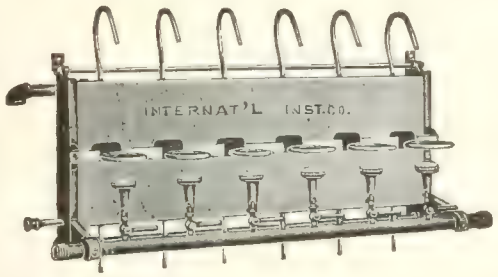

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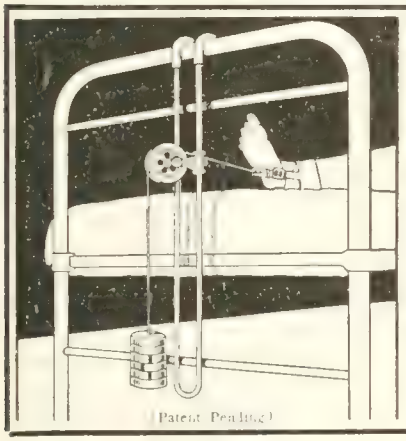

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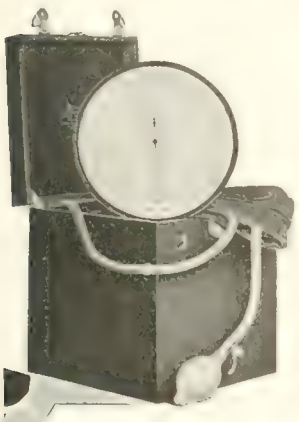

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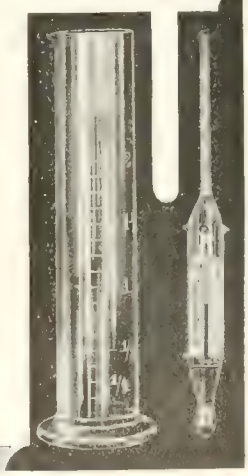

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The Kny-Scheerer Corp'n Bulletin

FOR DECEMBER, 1915

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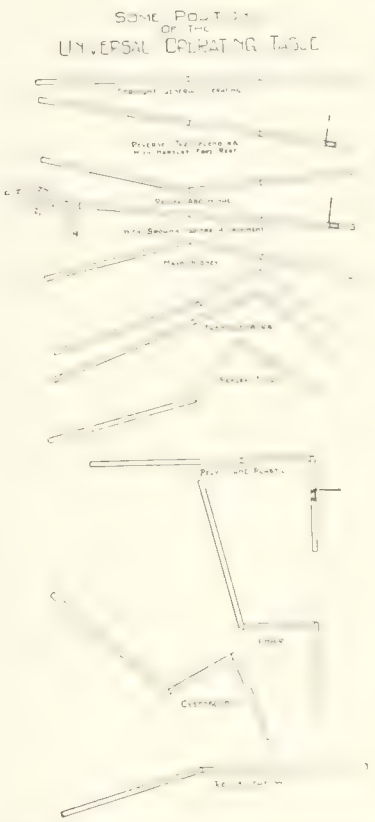

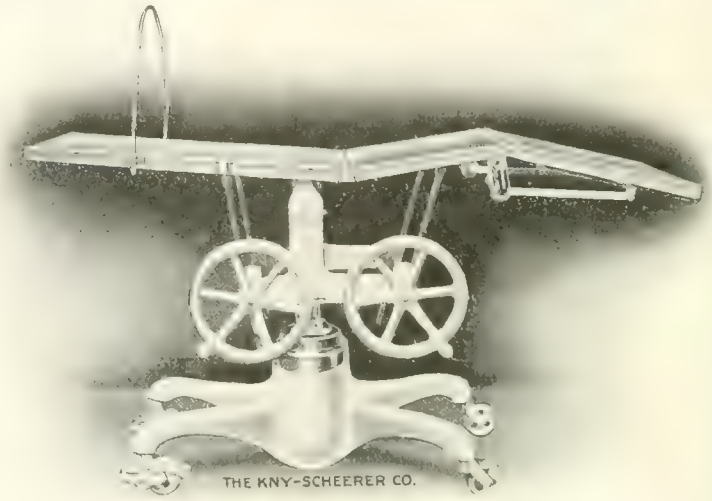

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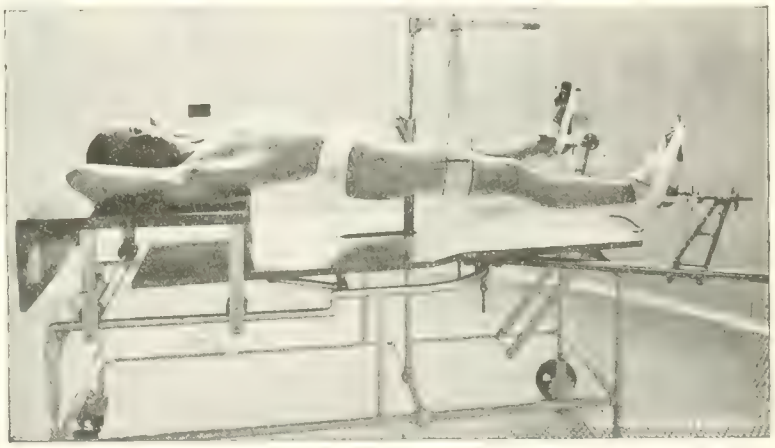

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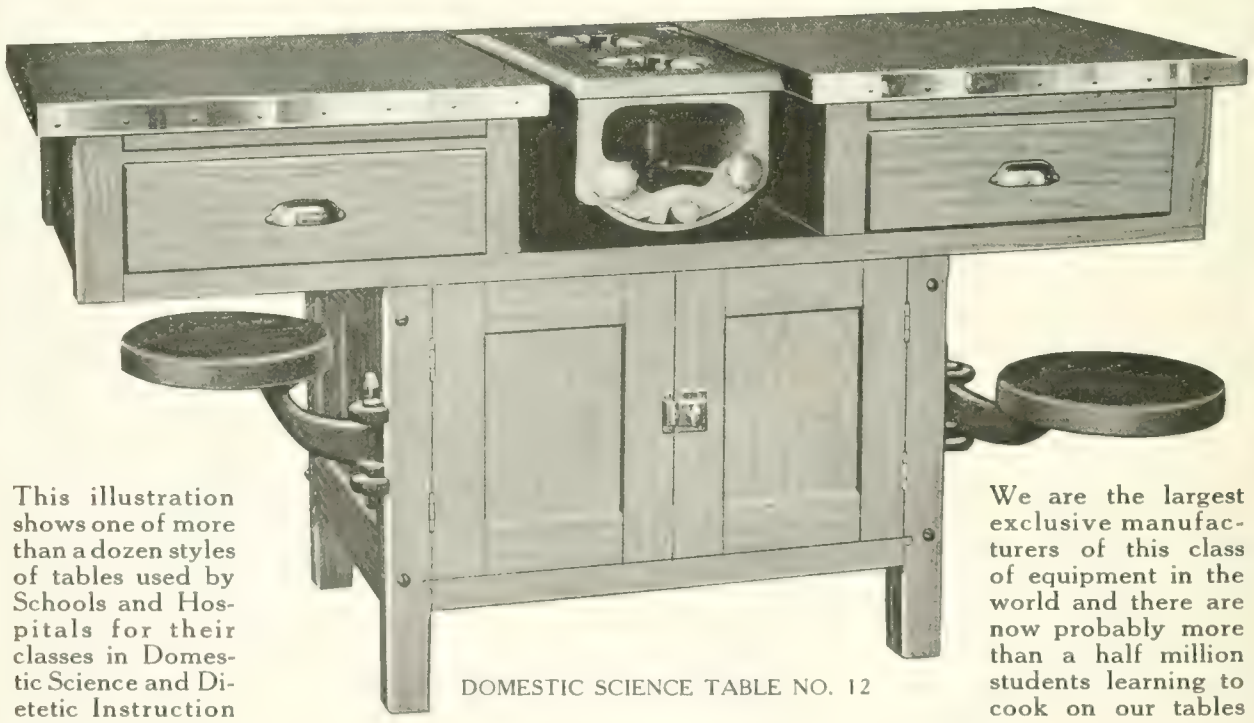

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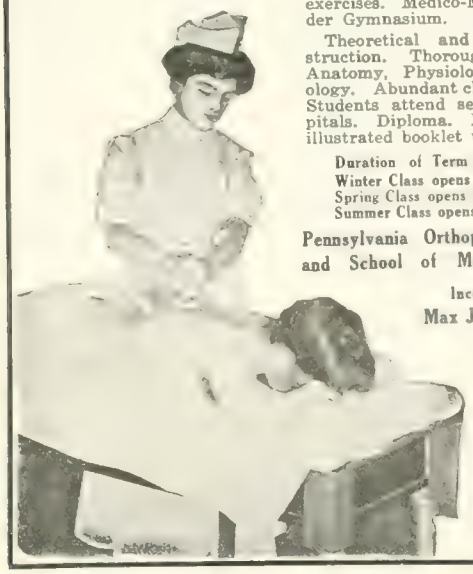

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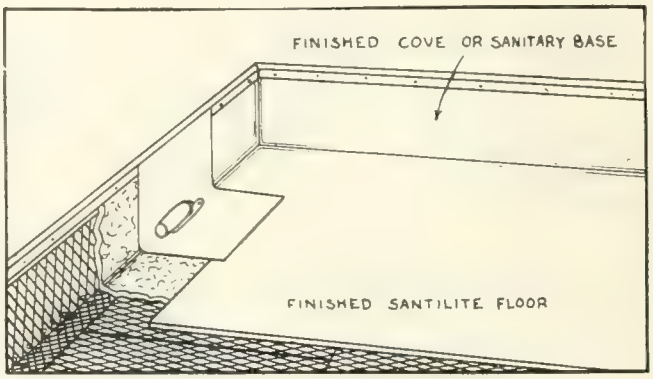

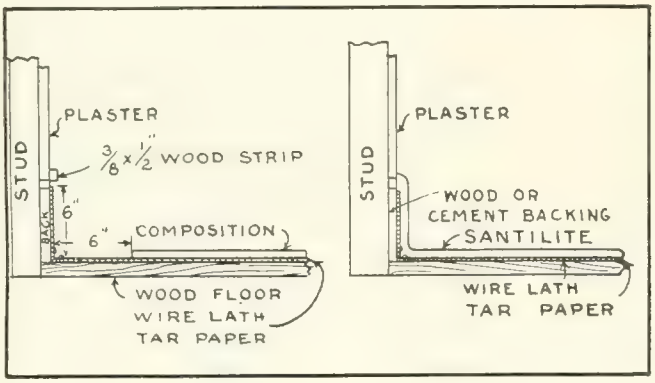

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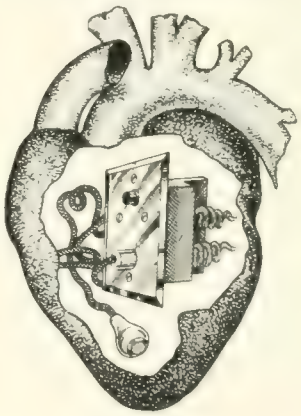

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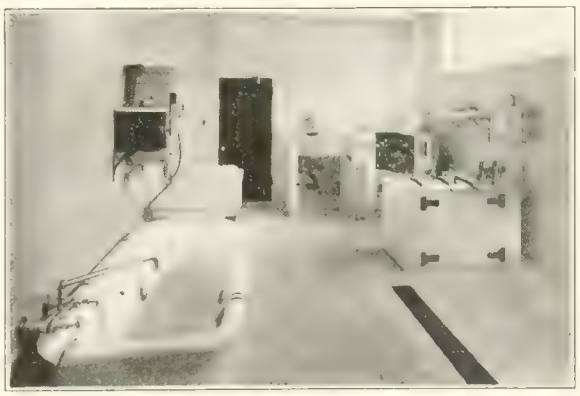

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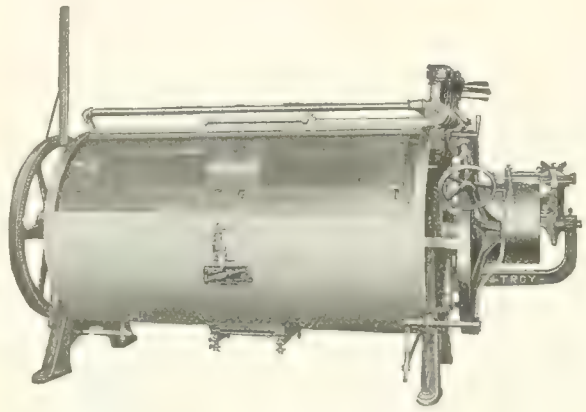

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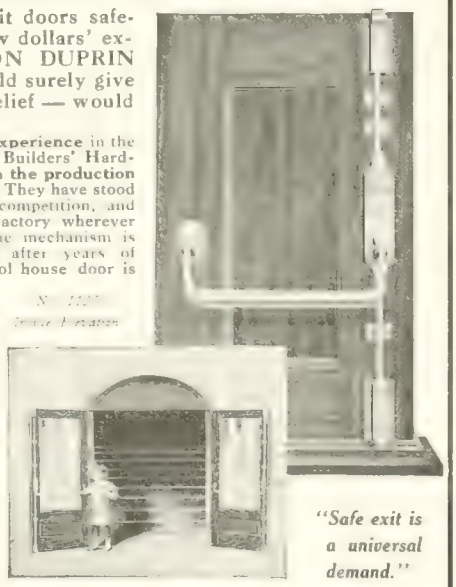

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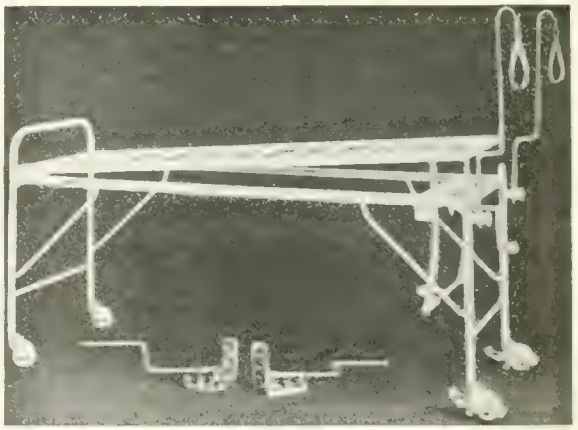

THIS OBSTETRICAL BED (No. 678) is constructed of heavy steel angle side rails, firmly welded, making an absolutely rigid bed. The steel surgical spring is arranged with our improved gear attachment, giving, when desired, a full-length of Trendelenburg position. The bed is equipped with nickel plated adjustable lithotomy staffs, and is finished in baked white enamel, mounted on 4-inch solid rubber-tired wheels, and is furnished with our improved foot pad device. Ask your dealer about Weiss Hospital Furniture, or write us for our comprehensive catalogue. We sell to dealers only.

M. Weiss & Company

MANUFACTURERS, NEWARK, N. J.

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ST. LUKE'S HOSPITAL, NEW YORK CITY—Equipped with McCray Sanitary Refrigeration System

The Standard Refrigerator Equipment of the World's Greatest Hospitals

Modern hospital practice demands that the same standard of absolute efficiency be maintained in the kitchen that prevails in the operating room. Perfect refrigeration is *absolutely vital* if this ideal is to be realized.

McCray Sanitary Refrigerators

are the result of 30 years of scientific study and experience. No more striking evidence of their superiority can be given than the fact that McCray equipment has been adopted for use in the finest hospitals in America after the most exhaustive and exacting comparative tests. Here are a few examples:

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Jefferson Medical College—Philadelphia
St. Luke's Hospital—New York
Presbyterian Hospital—Chicago
Royal Victoria Hospital—Montreal
Rockefeller Institute—New York
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Providence Hospital—Seattle
Lakeside Hospital—Cleveland
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Also in United States Pure Food Laboratories, United States Commissaries, United States Senate Restaurants, and numerous other Government Buildings, Battleships, Forts, etc.

McCray Systems may be secured for either ice or mechanical refrigeration. We have specialized on Built-to-Order Hospital Equipment. The services of our Designing Department are at the command of architects or hospital officials interested in obtaining authentic information on the latest developments in refrigerator construction.

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Any Special Design
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are
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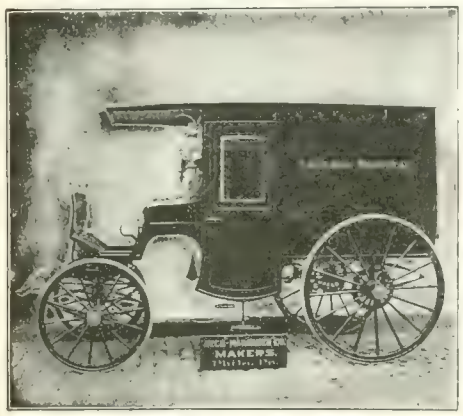
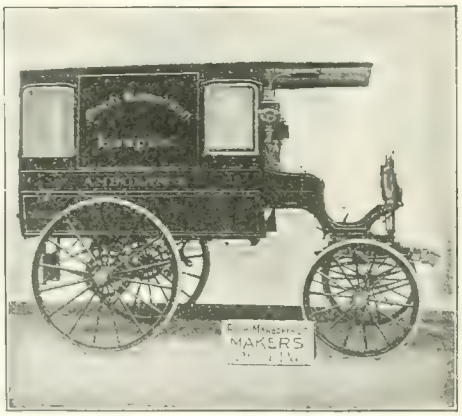
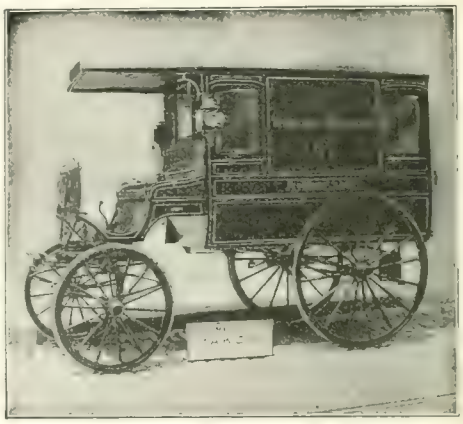
And Guaranteed



Leonard Hospital—Troy, N. Y.



Good Samaritan Hospital—Lebanon, Pa.



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All Our Ambulances
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Is Our Motto

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The Morgan Apparatus *for* Anesthesia

WITH the MORGAN Apparatus there is NO REBREATHING. There is continuous one-way flow of the ether vapor, because of the efficient valve action. There is no pump or heating device to force the flow.

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There is NO WASTE OF ETHER. One hundred anesthetics will save the price of the apparatus.

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Hospital Supplies

Bandages Waterproof Sheeting

Made by the

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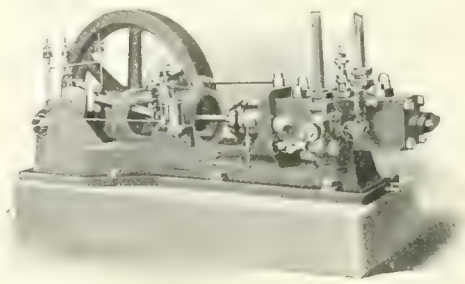
Hospital Refrigeration

HOSPITAL superintendents and architects do not have to be told the value of a refrigerating system. The use of ice for refrigeration in an institution presents many inconveniences and is by no means strictly sanitary. **Mechanical refrigeration** is most essential when the manifold uses and scattered refrigerator service of the hospital are considered.

With ice there can be no regulation of temperature. For certain serums a definite temperature, within a few degrees, may be needed; for certain specimens, a temperature just above freezing must be maintained, which must not be allowed to vary. Meat, vegetables and dairy products must be kept in a perfectly fresh state. Ice cream must be made in the latest approved sanitary way. Only with mechanical refrigeration is this possible.

We make a specialty of hospital refrigeration and can refer you to many noted hospitals that are now using KROESCHELL PLANTS and find them an economy.



THE KROESCHELL CARBONIC ANHYDRIDE SYSTEM of refrigeration is especially adapted to the hospital for the following principal reasons:

1. Safety first. This Carbonic Anhydride System cannot explode.
2. CO_2 is harmless and odorless.
3. This system is the most economical one.
4. Highest efficiency with low cost of maintenance.
5. It is simple to operate.

An ice plant in connection with the KROESCHELL SYSTEM will, in addition to cooling all refrigerators, supply the whole hospital with ice at low cost.

Drinking water cooled by the KROESCHELL SYSTEM circulates constantly and is kept at uniform temperature everywhere.

This system is also of great value in connection with the ventilating system and air conditioning for operating rooms, wards, etc.

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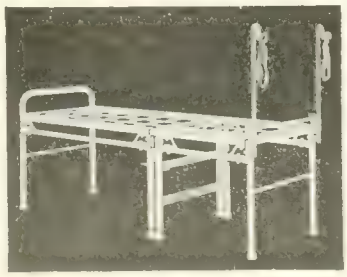
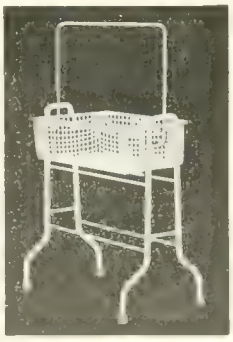
Hospital Furniture and Bedsteads
OF
Distinctive Character and Quality

Originators of Flush Joint Construction for Hospital Equipment, eliminating bulky castings and crevices which collect dust and germs.



No. 75—Obstetric Bed



No. 27 - Bassinet

Catalogue and discount on application

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A COMPOSITION FLOORING guaranteed not to crack or crumble—not cold like marble and tile—yet durable, sanitary and fire-proof. Smooth, but not slippery. May also be laid over old or new wood or concrete underfloors.

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Note the construction of the corners

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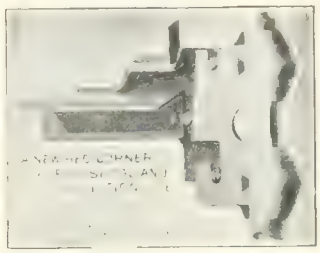

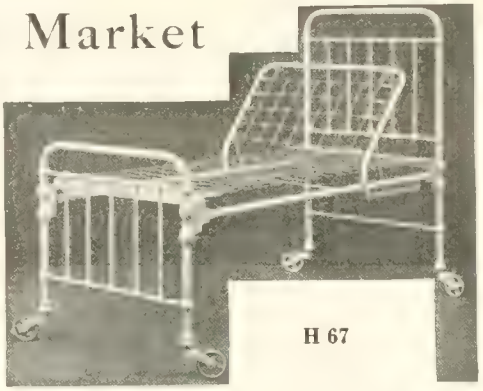

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¶ An Ideal Cathartic acting entirely by it's Lubricating Properties.
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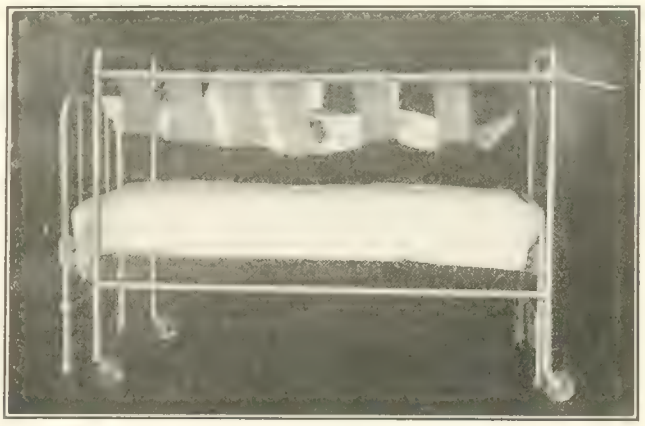
Nursing is made easy by the

FLOYD INVALID LIFTER



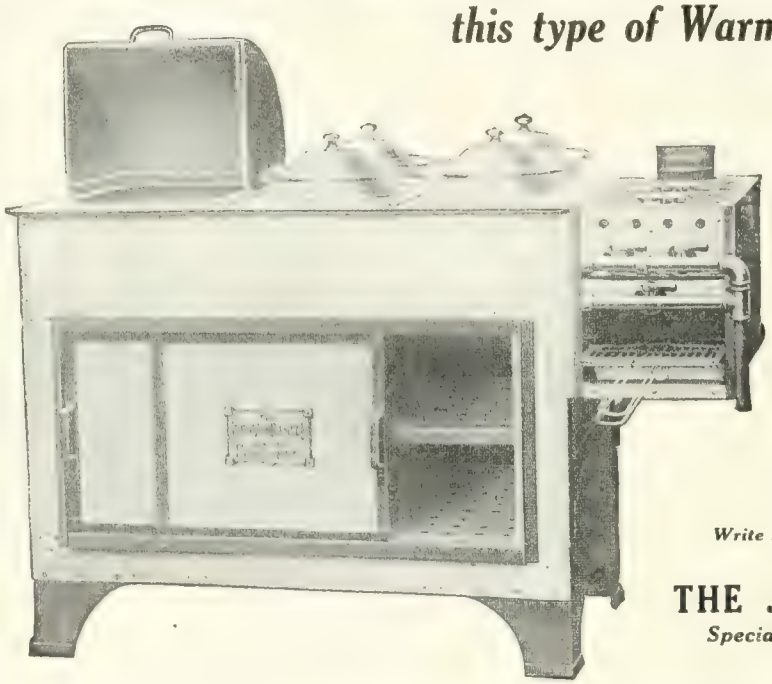
WITHOUT mechanical knowledge nor the use of any tools, a nurse can place a FLOYD LIFTER over a bed and lift a patient above the mattress and linen so that both can be removed from the bed, as shown by the accompanying illustration. The lifting rollers rotate together or separately, so that a patient can be turned on his side. When a patient has been lifted from the bed, neither he nor the LIFTER has any connection with the bed, so that the LIFTER carrying the patient can be removed to another bed, chair, bath or operating table with perfect convenience. When this LIFTER is not being used, it can remain on the bed, as the rollers can be removed in a moment so that nothing is in the way of patient or nurse.

This LIFTER is invaluable as a convenience for the nurse, and is also a source of wonderful comfort for the patient.

It has been purchased by many of the largest hospitals in this country, including the United States Army and Marine Hospitals and the American Red Cross. Write us for illustrated catalog.

THE FLOYD INVALID LIFTER COMPANY, Inc.
STAUNTON, VIRGINIA, U. S. A.

All the hospital serving kitchens in the New Cincinnati General Hospital, Cincinnati, Ohio, were equipped with this type of Warmer exclusively—



It is known as Van's Combination Hospital Carving and Serving Table, and is a long-felt want in hospitals for wards and diet kitchens.

The top is of White Enamel and and is Thoroughly Sanitary. The Meat Dish is of White Enamel, with heavy tin telescope cover, and there are four 1¾-gallon white glazed steam-tested stone jars with nickel-plated copper covers. Water Pan is made of heavy cold rolled copper. Plate warmer underneath. Can be heated by steam or gas.

Any number of meat or vegetable dishes can be added.

Write for information about this or any other kitchen equipment required

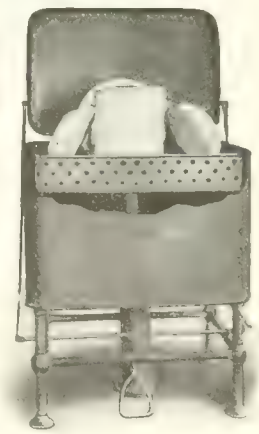
THE JOHN VAN RANGE CO.

Specialists in Hospital Kitchen Equipment

CINCINNATI, OHIO

BY a pressure of the foot the cover of the *Barnstead Utensil Sterilizer* opens wide; and at the same time the automatic lift causes the tray and contents to rise. When the cover is closing, the tray recedes.

The mechanism is simple in construction, and the whole apparatus is easily and quickly cleaned.



MADE and sold by the Barnstead Water Still Co., 51 Chardon St., Boston.

SEND for catalog of Water Stills, Sterilizers, and other hospital needs.

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Pennsylvania Hospital, Spruce St., Philadelphia
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And Others

We request communication with any of the above Hospitals as to the merit of our material

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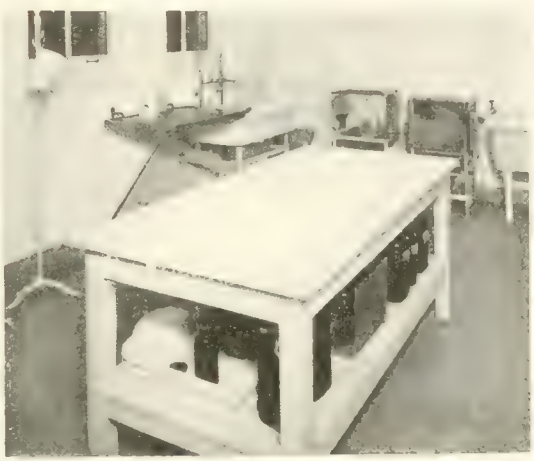

VITROLITE Table Top and Wainscoting, Utility Room, Harper Hospital, Detroit

VITROLITE is easily installed. Made in slabs like marble and attached by means of plastic cement **(VITRO).** Thicknesses: ¼ to 1 inch, inclusive. Pure white in color. Absolutely sanitary—not affected by organic acids. Non-porous. Easily cleaned. Always retains its bright, white color. Used in leading hospitals and highly indorsed by leading medical and surgical authorities.

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wherever absolute sanitation is desired

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VITROLITE

Installed in leading institutions like Drs. Mayo, St. John's, Los Angeles County Hospital, Hampden Hospital, Mount St. Mary's, Harper Hospital.

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42 BRANCH INSTALLING SHOPS IN UNITED STATES, CANADA AND EUROPE

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THE manufacture of malt preparations for medicinal use is a highly specialized professional work, and is successfully accomplished only under the direction of competent chemists. While in some respects similar to the brewing of beer, there are vital differences both in the materials which enter into these products and the processes of manufacture.

ANHEUSER-BUSCH'S
Malt-Nutrine
TRADE MARK.
the food-tonic

is the recognized standard of medicinal malt preparations of its class. The materials used in its manufacture are specially selected and safeguarded. Only the choicest Barley-malt and Saazer hops are used, and the finished product contains all of the soluble substances of these two materials.

Malt Nutrine is a perfect malt preparation, and should not be confused with cheap dark beers, many of which are represented to be medicinal malt products.

For the hospital patient, physician, or nurse who is in need of a refreshing, appetizing, nourishing and mildly stimulating liquid food, ***Malt Nutrine*** is most serviceable. It is low in alcohol strength (less than 2%), but high in food value (14% of the solids extracted from malt and hops).

Pronounced by the U. S. Internal Revenue Department a PURE MALT PRODUCT, and not an Alcoholic Beverage

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SEMDAC so revives and renews the appearance of all polished surfaces that it brightens up a room like sunshine.

Dusting with a cloth moistened with SEMDAC is not only the necessary sanitary precaution that keeps dust from scattering—

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SEMDAC cleans and brightens enamel beds and fixtures more thoroughly than soap and water; is equally effective on linoleum and oil cloth; and is the best of all polishes for automobile and ambulance bodies.

Whenever there is a cleaning job, modern efficiency suggests the use of SEMDAC—the universal, sanitary cleanser.

SEMDAC comes in lithographed cans, fitted with a convenient spout, and also in barrels and half barrels.

STANDARD FLOOR DRESSING is a companion product to SEMDAC especially adapted for hospital and institutional use. It is an invaluable and economical agent for keeping wooden floors clean and sanitary. Like SEMDAC it is guaranteed by its makers and may be obtained from leading dealers or from any branch house of the

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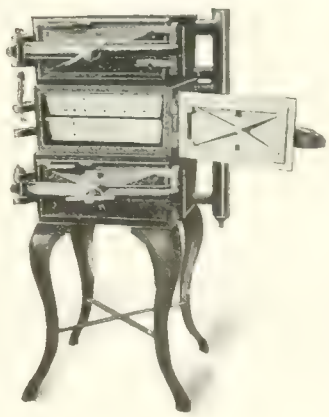
KITCHEN OUTFITS BURTON STEEL RANGES



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Cast iron compartments. Doors so arranged that there is no danger of burning from a sudden blast of steam. No condensed water touches baskets.

Ranges, Dishwashers, Steam and Kitchen Tables, Ward Tables of a new Sanitary Pattern.

Authoritative expert advice with complete kitchen equipment plans free of charge

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Foster "IDEAL"
Hospital Beds and Cribs

Used in Many Institutions

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We show many patterns in our catalogue and make special beds to any specifications. Write for a copy of our special institution bed catalogue.

No. 309

Tubing, 1 5/16 inches; cross rods, ⅜ inch. Regular height of head, 36 inches; foot, 32 inches; spring, 17 inches from floor. The spring can be placed higher from floor, on special orders, by making the head and foot higher, at a small extra charge. Regularly furnished with "Q" National spring, as shown.

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A new and wonderful impermeable dressing
Far superior to gutta-percha tissue or oiled silk

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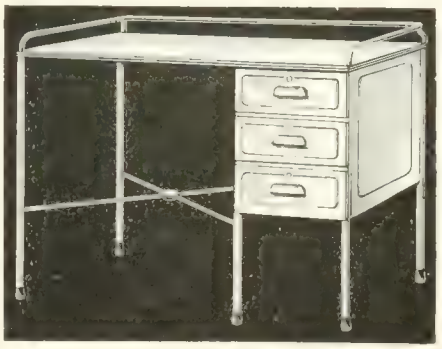
REID BROS. Manufacturers and Importers of Hospital Supplies
San Francisco, Cal., 585 Mission St. Seattle, Wash., 1303 Fourth Ave.

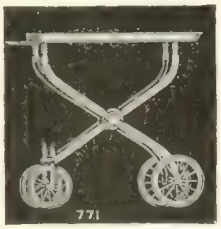
No. 110—Bedside Table



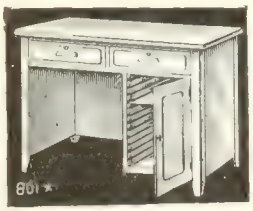
No. 267—Nurse's Table Desk

THE STRUCTURAL FRAME MADE OF ANGLE STEEL

No. 230C—CABINET FOR INSTRUMENTS, DRESSINGS AND SUPPLIES. This is one of the most useful, strongly built and least expensive cabinets made. The body is electrically welded to the frame. The cabinet cannot sag, scow or vibrate.



No. 771—Folding Wheel Tray



No. 801X—Nurse's Desk

Why Is Steel Sanitary?

STEEL is a good conductor and a good radiator. When you touch it the heat is drawn out of your body, and even in summer the chill of steel on most parts of the body is unpleasant.

Mice, bugs, vermin, even microbes, will not remain in contact with steel; neither will eggs or larvæ, in contact with steel, hatch. Steel is therefore the only material that is in its very nature aseptic.

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No. 771—FOLDING WHEEL TRAY. When open, this wheel tray will hold practically any weight. When folded, it occupies little space. Top, 20x32 inches.

No. 801X—NURSE'S DESK. This has cabinet for chart files. Top, 26x42 inches.

No. 267—NURSE'S TABLE DESK. Light, sanitary, portable, and yet rigid. Top, 24x36 inches.

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SANI-STEEL
INDIANAPOLIS

Columbia School Supply Co.
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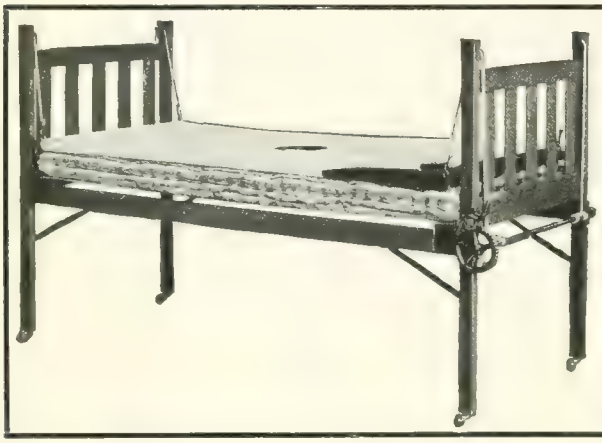
Sole Distributors for the United States of

"KELENE"

(Pure Chloride of Ethyl)

FRIES BROS., Manufacturers, **92 Reade Street, New York**

Best Local Anaesthetic Also as Adjuvant to Ether in **General Anaesthesia**



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Style 128

Rolling and Invalid Chairs

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for the new

CINCINNATI GENERAL HOSPITAL

One of the 32 Ward Kitchen Refrigerators is shown in cut

Many costly mistakes are made by the installation of improperly designed refrigeration which could easily have been avoided by expert advice.

The C. Schmidt Company is prepared to furnish

EXPERT AUTHORITATIVE ADVICE

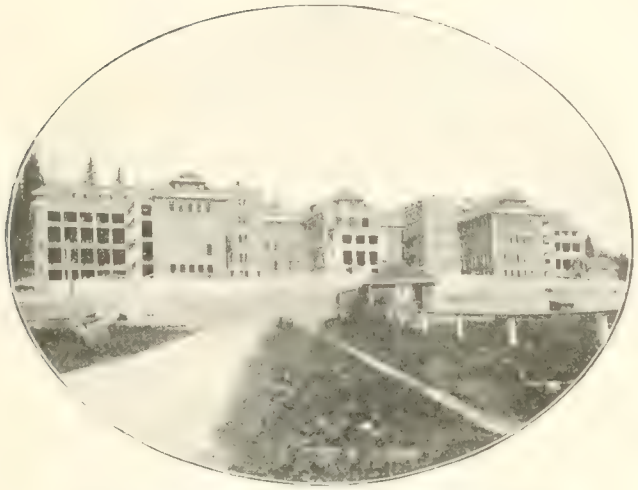
to Boards of Trustees or Hospital Superintendents guaranteeing them the maximum refrigeration results at minimum cost and will furnish them

PLANS AND SPECIFICATIONS

and consultation with their experts free of charge.

THE C. SCHMIDT CO.

John and Livingston Streets CINCINNATI, OHIO



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Besides being pre-eminently qualified for the plastering of all hospitals, by reason of its Permanence and Sanitation

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is the only plaster that will undergo the Sterilization Process without deterioration. Our hospital circular sent free.

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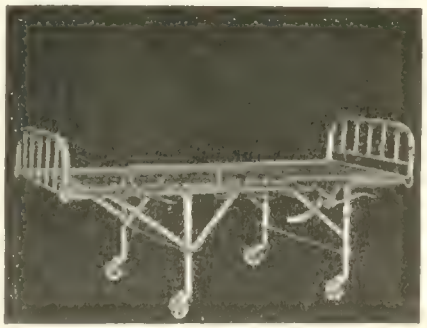
CHICAGO NEW YORK

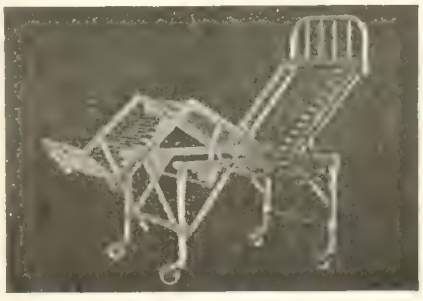
The Way Chair Bed



Used as regular bed

Can be adjusted to any desired position.

Can be used as a wheel-chair.



The Fowler position

Price, complete with strictly high-grade cotton-felt mattress $30.00

With hair mattress $35.00

F. O. B. Factory

MINNEAPOLIS BEDDING CO., Manufacturers

MINNEAPOLIS, MINN.

"Knuklfit" Surgeons' Gloves

The Acme in Surgeons' Gloves

MADE OF SELECTED FINE PARA RUBBER

IT IS OBVIOUS

THAT—"The knuckles are the largest part of the fingers."

THAT—"Unless there is a bulge in the glove fingers at these points, free action of the fingers will be impaired."

THAT—"The plain fingered glove will bind across the knuckles and cause tension on the finger tips."

THAT—"Tension on the finger tips impairs that sensitive cuticle touch needed by surgeons while performing operations."

WHY have many surgeons bought oversized gloves? Because they have been unable in the past to buy a perfect-fitting glove and yet enjoy comfort, free action of the fingers, and sensitive cuticle touch.

OUR GUARANTEE

We guarantee our medium-weight gloves not to vary over 3/100 of an ounce per glove, bear more sterilizations, and give greater comfort to the wearer and a more sensitive cuticle touch. If they fail in any one of these features, return the gloves and we will refund you your money.

THE LINCOLN RUBBER COMPANY

AKRON, OHIO

SOME HOSPITALS

Some Hospitals seem to have the idea that soap is the only material used in their laundry that really does any cleaning. They look upon all alkalies as merely water breakers and value them as soap savers for this purpose only.

But let us see if this reasoning really applies to

"Wyandotte" Yellow Hoop

That "Wyandotte," Yellow Hoop is a water softener, so far all agree. But if that was its only use does it not appear rather singular that so many believe it does much more?

You know that by combining oily or fatty matter and caustic you obtain soap. By using them separately before uniting them only the caustic possesses washing properties, the grease and oil have none.

Then what advantages are to be gained by uniting them? Just this: soap produces a suds, and suds is the cheapest carrier of those little dust or dirt particles liberated from the clothes by the alkali, and which, being too light to sink, would otherwise cling to the clothes. Still another action of the fatty part of soap is to neutralize partially the corrosive action of its caustic component, thus protecting the clothes from its harmful nature.

"Wyandotte," Yellow Hoop is not the alkali of soap. It possesses all the washing properties of such an alkali, with none of its harmful effects. It opens the fiber of the clothes, dissolves the fats and greases, loosens the dirt and bodily excretions, neutralizes the ill-smelling odors, and does the washing so thoroughly that soap is needed only for the floating particles.

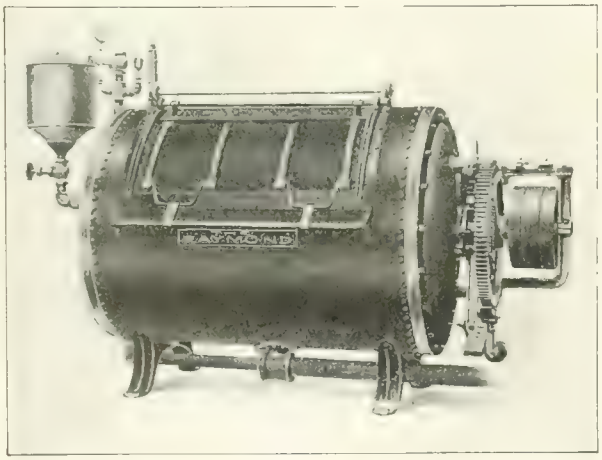
Now, ask yourself this question: Since soap is much more expensive than "Wyandotte," Yellow Hoop, is it not the part of good business economy to use all the "Wyandotte," Yellow Hoop you can to good advantage, and just as little good soap as necessary?

Order from your supply house and prove it to your own satisfaction. Or, if you prefer, we will ask our service department to assist you with the test. This assistance implies neither obligation nor expense to you.

THE J. B. FORD CO., *Sole Manufacturers*, Wyandotte, Mich.

This Soda has been awarded the highest prize wherever exhibited.

Sterilize and Disinfect EVERYTHING You Wash Before It Leaves the Laundry Room



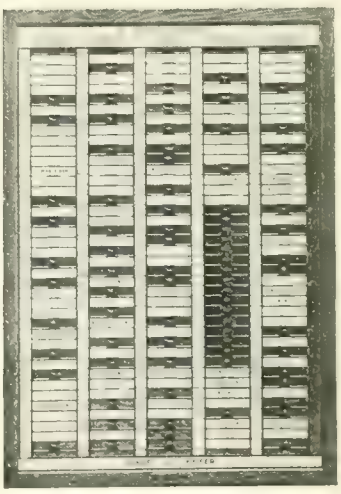
The highest grade of both dry and moist sterilization can be performed in this machine. It is smaller in size than the old type Kinyoun-Francis sterilizer and costs less, yet it does nearly the same amount of work.

Write for Catalogue

The Consolidated Hospital Supply and Laundry Machinery Company
SAUGATUCK, CONN.

UNIVERSAL HOSPITAL PATIENTS' REGISTER

Style D-2



Shows Private Rooms, Wards and each bed therein.

We specialize on HOSPITAL REGISTERS of all kinds; making them to order and to fit any requirements, also of any size and for any size card desired.

Send for our catalog, which fully illustrates and describes our entire line.

UNIVERSAL REGISTER COMPANY
226-232 West Ontario Street
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TILEINE

The Universal Flooring

The most sanitary and durable plastic flooring made. Lay it over your old floor or lay it as a new flooring.

Noiseless to walk on, and absolutely fireproof.

TILEINE is laid solely by expert workmen in the exclusive employ of this company.

The success of TILEINE is due largely to this expert method in laying.

Write for free samples

TILEINE COMPANY OF AMERICA, Inc.
101 Park Avenue **New York City**

Adopted by the U. S. Navy

Used in field and hospital under every condition of climate, in every corner of the world.

The Verdict — "Absolutely Satisfactory."

Royal Archer

THE PERFECT RUBBER SHEETING

GOOD ENOUGH for Uncle Sam
IS IT TOO GOOD for YOU?

Sterilizable—of course—and a real economy because
ONE FULL YEAR OF SERVICE GUARANTEED

Your dealer will supply you. We will gladly send samples and full information.

ARCHER RUBBER COMPANY
MILFORD, MASS.

Extract from August Issue of The Modern Hospital.

HAVE YOU A CATALOGUE FILE?

DOES your hospital maintain a file of catalogues issued by dependable manufacturers of hospital equipment and supplies? Such a catalogue file is very valuable for reference, and if you have not already established the rule of securing and preserving catalogues and other printed matter relating to products of use in your institution, let us suggest that such a file be started. It is good hospital practice.

The Modern Hospital Publishing Co.

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Manufacturers of Kitchen Equipment, including Ranges, Steam Tables, Coffee Urns, etc. *Distributors of everything* in furnishings required by Institutions and Hospitals.

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208-220 W. Randolph St., Chicago

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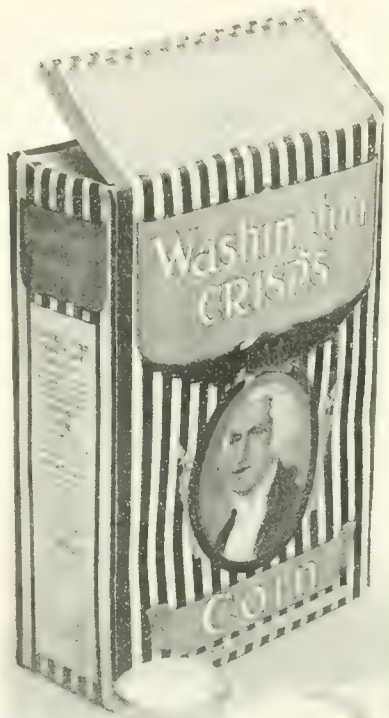
Address _____

The Kind with the Big Flakes



THE ideal light lunch for the convalescent—full of "smack," yet not surfeiting; non-heating, easily digested, delicious. Give patients

Washington Corn Crisps

and they will "pick up" in appetite.

United Cereal Mills, Ltd.
Chicago, Illinois

QUINCY, ILLINOIS BUFFALO, NEW YORK

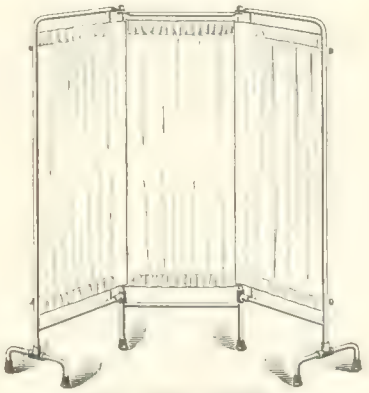
We Specialize on Institution Beds

We center every effort of our organization on the production of Metal Beds, Springs, and Hospital Furniture for general institutions. Will be pleased to quote prices on application.

A112—WHITE ENAMEL.

Pillars, 1 5/16 in.
Filling, 7/8 and 1 1/16 in.
Head, 48 in.
Foot, 36 in.
Sizes: 3 ft., 3 ft. 6 in., 4 ft., and 4 ft. 6 in.
Fabric, Heavy double weave.
Ribs, 1¼ in. apart.

Weight (6 ft. 3 in. long by 3 ft. wide), 116 lbs.
Height from floor to top of spring, 23½ in.
THREE-PIECE BED ON STEEL ANGLE FRAME—STANDARD RAIL CONNECTION.
Made with Adjustable Back Rest, unless otherwise ordered.



A126—BED SCREEN.

Small Size:
Height, 5 ft.
Width, open, 5 ft.
Width of wing, 1 ft. 8 in.

Large Size:
Height, 5 ft. 6 in.
Width, open, 7 ft. 6 in.
Width of wing, 2 ft. 6 in.

Frame made of ⅝-in. tubing.
Curtain rods, ¼ in.
White enamel.
Rubber tips.
Shipping weight, 25 lbs.
In ordering give size desired.

SMITH & DAVIS MANUFACTURING COMPANY

Manufacturers of High Grade Institution Beds and Hospital Furniture

1925 Locust Street — ST. LOUIS, MO.

300,000

feet of Hospital floors installed during the past year and every foot is

SANITARY
FIREPROOF
QUIET
RESILIENT
ATTRACTIVE
GUARANTEED

Manufactured and installed by the

ATLAS FLOOR COMPANY

37 West VanBuren Street
CHICAGO

The "Mercy-Rest"

"A PERFECT REST"

The "MERCY-REST" gives the patient the position "that just fits."

The ***patient*** in bed or the ***nurse*** can work it—***"EASY."*** There are no "gears," "ratchets," or "dogs" in it to grind or trip.

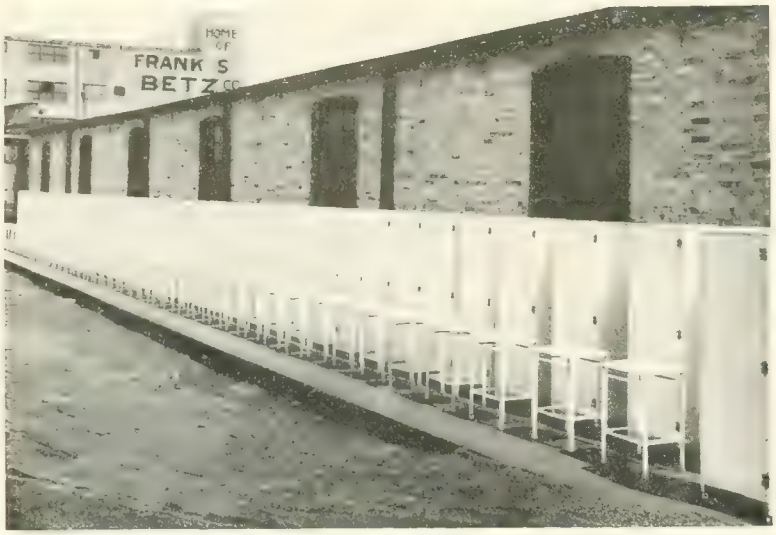
The "MERCY-REST" is easily attached to brass or iron beds, is never in the way, and is always ready for use.

THE MERCY HEAD-REST COMPANY

ALANSON C. NOBLE, President

339 S. Wabash Avenue, CHICAGO, ILL.

QUALITY—QUANTITY—PRICE



These Lockers and Tables form part of the equipment of a Texas Hospital. The Superintendent wrote us saying: "This order demonstrates to me that it is possible to have Quality, Quantity and Price. We are perfectly satisfied with the Lockers and Tables that you supplied us, and we saved about 25%."

750 Lockers of a single style sold by us to the United States Government for one institution.

Merchandise buyers in any large concerns find it to their advantage to buy from the manufacturers.

Shrewd hospital buyers are now learning this same lesson.

Mr. Hospital Superintendent, come to Hammond, and let us show you how we ***build Quality*** into our Hospital Furniture. Our Hospital Service Department is at the disposal of institution buyers.

FRANK S. BETZ COMPANY

General Offices and Factory, HAMMOND, IND.

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are most effective when printed with the same clearness that you make your verbal announcements.

This publication speaks the quality of our work, and all readers of your literature will appreciate the same clearness of type and illustration.

We print under the supervision of expert designers, on the assumption that the best work is cheapest. With this point uppermost, consult

Little & Becker Printing Co.

Ninth and Walnut

St. Louis, Mo.

TOLEDO *Invalid Chairs*

are staunch, rigid, and easy-running—a comfort to the occupant.

We carry a wide range of styles in stock, and can fill orders usually the day we get them. Send for catalogue showing complete line.

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Toledo Ohio

Ziola HIGH-POTENTIAL ROTARY CONVERTER

A DISTINCT ADVANCE IN X Ray Machines

Simplicity and Efficiency
Universal for
Radiography, Fluoroscopy and Therapeusis

Finely illustrated catalogue sent on request

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MADISON
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Institution Beds

Having Malleable Iron Locks
Guaranteed Unbreakable

Quality First Consideration

Well constructed and finely finished. Made with either Woven Wire or Link Bottom as preferred. High grade casters

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Velvetile

Composition Flooring

Best for Hospitals and all buildings requiring floors that are

Sanitary
Fire-proof
Quiet
Comfortable
Resilient

Velvetile can be laid on either wood or concrete subfloor.

We offer a wide selection of time-tested colors that do not fade.

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A complete line of Hospital Record Sheets covering every department. Made up in standard sizes. Ask for a copy of Filing Device Catalog and Folder of Samples.

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WE are interested in

☐ Hospital Record Sheets ☐ Filing Appliances
☐ Patients' Registers ☐ Nurse Desks

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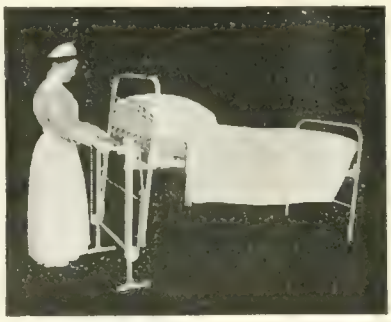
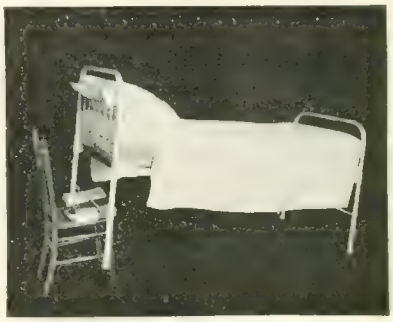


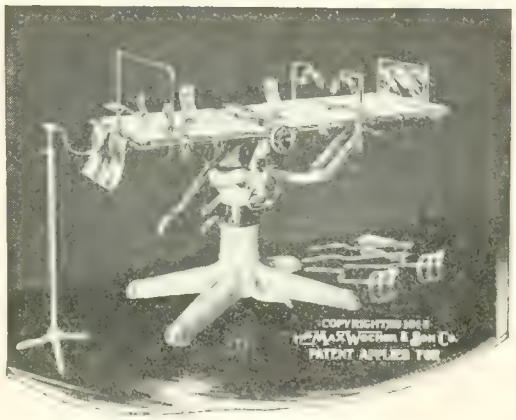
One Nurse can operate the Ernest Bed Jack

Light—Durable—Dependable—Efficient Service—Price Reasonable. Will send Bed Jack, ***Express Prepaid,*** for 30 days' trial. Two sizes, 30 and 36-inch.

ERNEST BED JACK CO.
3551 Sheffield Ave. Chicago



"Never Again"



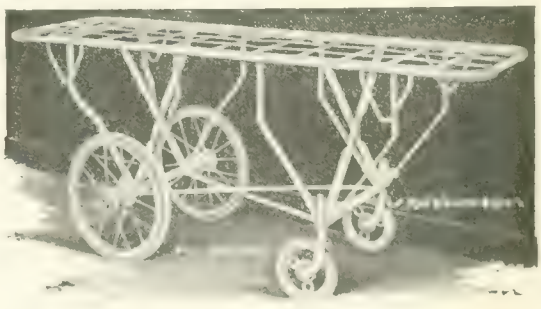
The Babcock Wheel Stretcher

Always selected at competitive exhibits. It cannot upset; has auto axles with ball bearings and ball races. Solidly constructed with malleable iron connections and hand-forged braces. All wheels have 1½-inch rubber, double wired-on tires.

The Representative American Operating Table

1916 Model

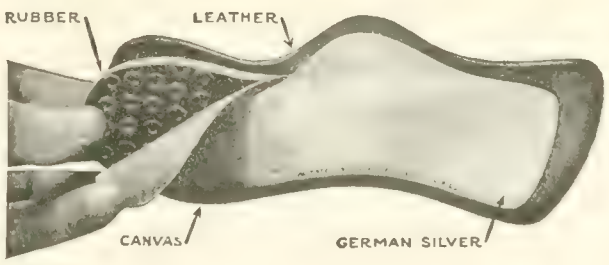
The Cincinnati Pedestal Automatic Operating Table gives every position known to modern surgery. It is without slow operating gear wheels, being controlled by fulcrum and locked by locking device lever. It can be revolved, elevated, lowered, tilted, slanted, inclined, etc., quickly and easily.



The above and many other modern furniture designs described in our 22nd Edition Catalog. A postal brings it.

Keleket Transformers, B. & L. and Spencer Microscopes, Faught and Tycos Sphygmomanometers

19-23 W. 6th St. THE MAX WOCHER & SON CO. **Cincinnati, Ohio**



Look To Your Feet

It is there where many of the common aches, pains, and other ills have their origin. Persons who have to be on their feet much of the time are often subject to a breaking-down of the arch of the foot, or "flat arch." This causes intense pain in the feet and ankles, and frequently in the knees, hips, and back, making walking a painful task. The

FOSTER COMBINATION ARCH SUPPORT AND TRED-AIR HEEL CUSHION

relieves the strain on all the foot muscles, supports the arch in correct position, and gives you a natural, healthful spring that takes away the jars and jolts from your step and makes walking a real pleasure.

Those engaged in the work of a hospital, where sanitation requires floors of hard wood, tile, or concrete, are peculiarly susceptible to the breaking of the foot arch, with its attending suffering. To them the Foster Combination Arch Support and Tred-Air Cushion is of particular value, acting as a human shock absorber in their continual walking on hard floors with no resiliency.

The Foster Combination Arch Support and Tred-Air Cushion is made from a special, tempered German silver, which gives just the right spring and will not rust.

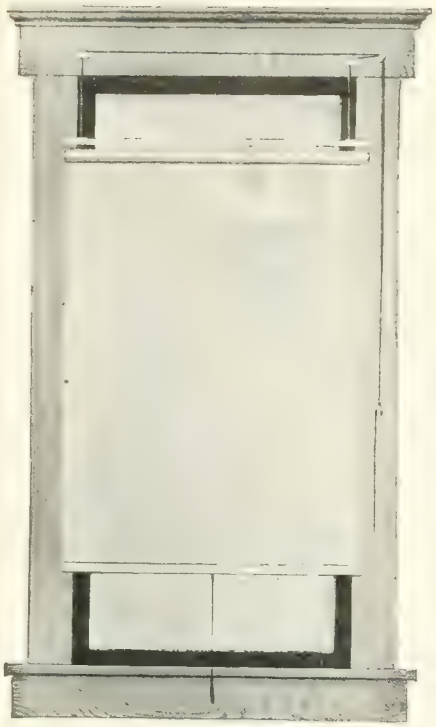
There is no other "just as good." At your shoe dealer's—or send $2.00 and the size of your shoes, and we will send you a pair postpaid.

One pair will do for all your shoes

Foster Rubber Company

114 Federal Street, Boston, Mass.

Originators and Patentees of the Foster Friction Plug Which Prevents Slipping



Any

area of shade at any altitude—

permitting ventilation or light to come from the top as desired.

This means much to the patient's eyesight, health and comfort.

Send to us for descriptive circular of our shades

LUTHER O. DRAPER SHADE CO.
Spiceland, Indiana

A New and Welcome

$1.00 CHRISTMAS GIFT IDEA

It can't roll over

It won't leak

Filled with 3 quarts of boiling water

20 Hours of Heat and Comfort

For Sleeping Porches, Baby Carriages, Sick Rooms, Elderly People with Poor Circulation; also Automobiles

Made of specially prepared clay, and glazed. Doctors, hospitals and many families throughout the country using them, all recommend them to their friends. Easy to fill—easy to handle. It will neither rot, burst nor corrode—is practical, sanitary and lasts a lifetime.

Price, $1.00 each f. o. b. Boston
$1.25 each f. o. b. Hamilton, Ont.

DORCHESTER POTTERY WORKS
9 TO 17 PRESTON ST., DORCHESTER, MASS.

CÉLESTINS

VICHY

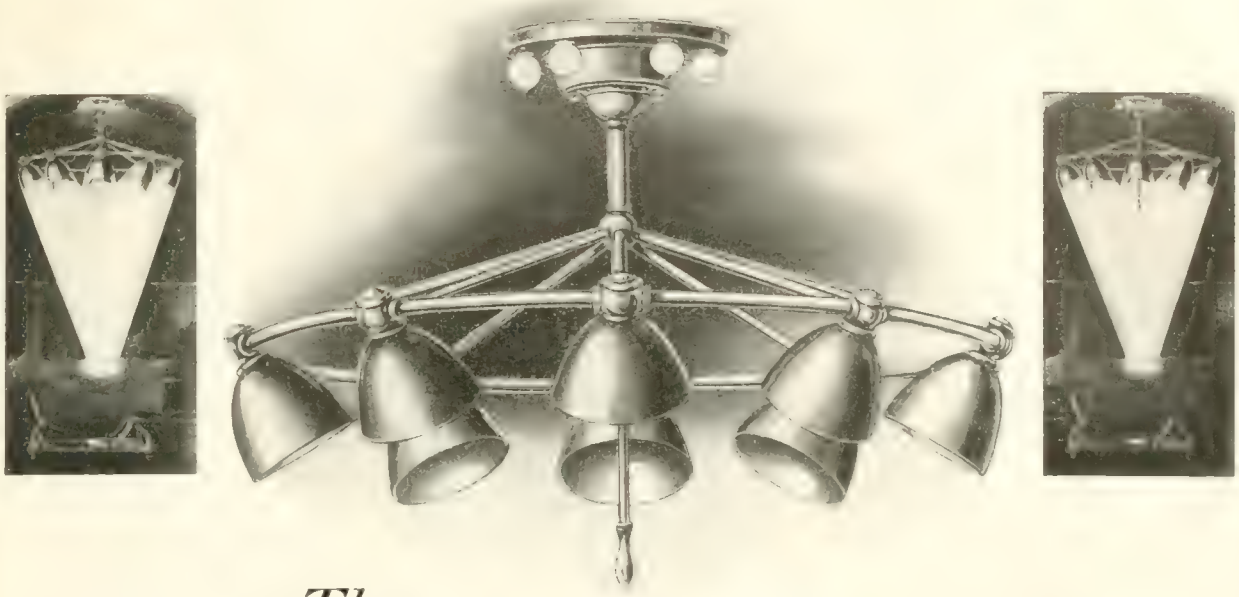
THE STANDARD NATURAL ALKALINE WATER OF THE WORLD

So-called Vichy in syphon, bulk or drawn from the soda fountain, is

NOT VICHY

Remember—and always use the name

CÉLESTINS



The

BARTLETT

"No-Shado" Lite

for the operating room will save you building a new skylight in your old operating room.

The "No-Shado" Lite was designed by Dr. Bartlett to obviate this very necessity. It positively eliminates all shadows from the field of operation.

THE light rays of the "No-Shado" Lite meet at an angle of 45°, making possible the visual examination of deep wounds.

Intensity of illumination is secured without glare, the frosted globes giving out a soft, evenly diffused light. The light is constant and is too distant to throw heat against the operator. Moreover, this bright illumination is secured with great economy in the use of electricity.

THE "No-Shado" fixture is of brass pipe, finished in white enamel. The parabolic reflectors are of spun brass finished inside in polished silver, outside in dull nickel.

The "No-Shado" Lite is exceedingly strong, easily kept clean, and simple in operation. A handle, in connection with a ball joint, allows instant focusing of all light rays on any spot desired.

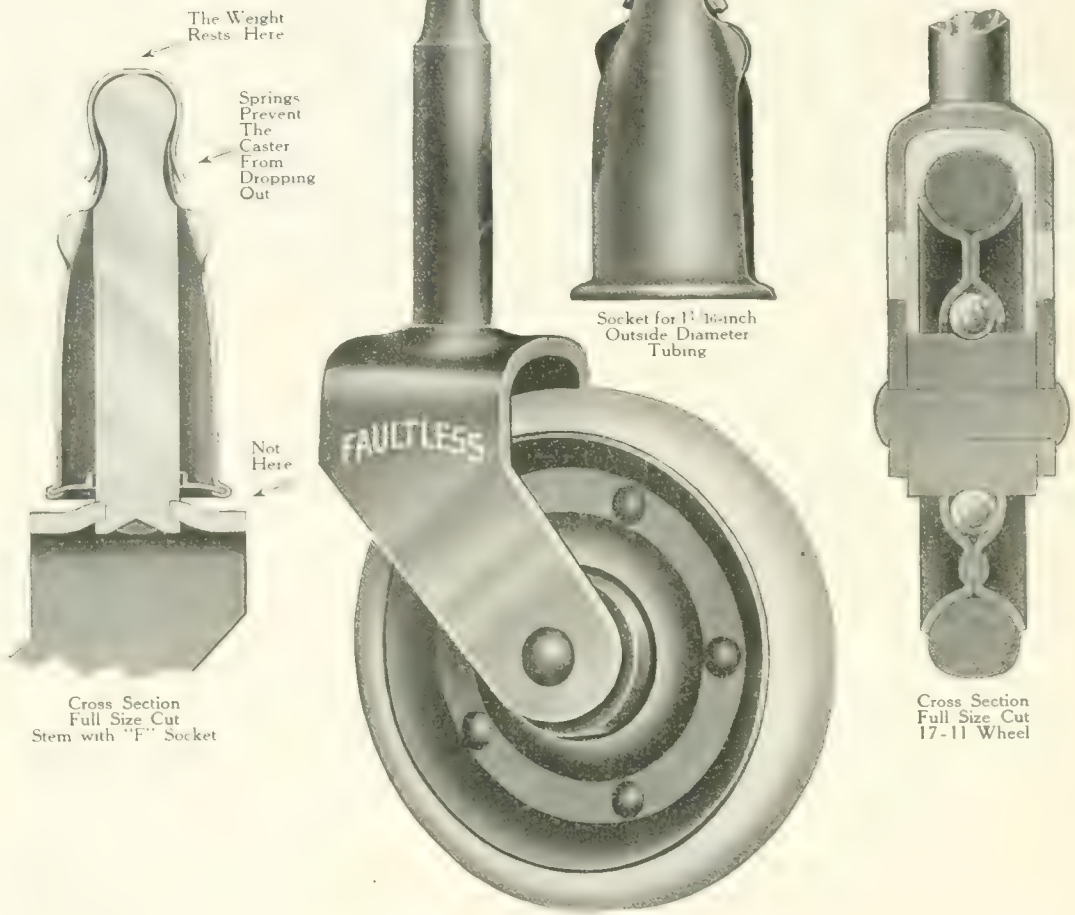
SCANLAN-MORRIS COMPANY

Manufacturers of "THE WHITE LINE" Hospital Furniture and Sterilizing Apparatus

MADISON, WISCONSIN, U. S. A.

Write to us for Monograph C, "The Bartlett No-Shado Lite."

FAULTLESS


The Weight Rests Here
Springs Prevent The Caster From Dropping Out
Not Here
Socket for 1 1/16-inch Outside Diameter Tubing
FAULTLESS
Cross Section Full Size Cut Stem with "F" Socket
Cross Section Full Size Cut 17-11 Wheel

FULL SIZE CUT
F-17-11

¶ A tire which outlasts solid rubber five times, and will not "set" or stick to the floor because of the canvas-rubber composition.

¶ A caster which moves at the slightest touch because of the position of the ball-bearing raceway, together with the pivot-bearing socket.

¶ A caster which fits sixteen different sockets for wood and metal furniture.

THIS IS THE FAULTLESS
HOSPITAL CASTER

MANUFACTURED EXCLUSIVELY BY
THE FAULTLESS CASTER COMPANY
EVANSVILLE, INDIANA

MISSOURI ATHLETIC ASSOCIATION

THE Brecht COMPANY ST·LOUIS·

ESTABLISHED 1853

Refrigerators That Refrigerate

and are

Dry
Sweet
Easily Cleaned
Permanent

For Over 60 Years

BRECHT REFRIGERATORS have been "Standard" with Architects, Engineers and Experts in all lines using cold storage.

Sixty years and more thorough study given to problems of refrigeration have produced in BRECHT Large or Small Cooling Rooms many exclusive features making for efficiency.

RECENT LARGE INSTALLATIONS:

Barnes Hospital, St. Louis, Mo. - - - - -	21 Boxes
Muehlebach Hotel, Kansas City, Mo. - - - -	17 Boxes
Missouri Athletic Association, St. Louis, Mo. - -	22 Boxes

Can be adapted for Ice or Mechanical cooling.

Built-to-order Hospital Equipment entrusted to the hands of our expert designers is sure to give permanent satisfaction as to appearance as well as cold storage of supplies.

THE BRECHT COMPANY

Established 1853

ST. LOUIS, MO.

NEW YORK HAMBURG BUENOS AIRES

ROYAL BAKING POWDER

The most eminent scientists, food authorities and baking experts are on record to the effect that cream of tartar baking powder is the most satisfactory because of its healthful properties. It leaves no mineral salts in the food and renders the biscuit and cake more digestible and appetizing.

Made from
Cream of Tartar
derived from
Grapes

A
ROYAL BAKER
and
PASTRY COOK BOOK
Will be sent free upon request

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ROYAL BAKING POWDER COMPANY
NEW YORK, N.Y.

No Alum
No Phosphate

Absolutely Pure